



State of New Jersey

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Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
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CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7011 2970 0003 7284 0159

July 29, 2015

Jack Eisenmann, Manager
Paulsboro Refining Co LLC
800 Billingsport Road
Paulsboro, NJ 08066

Re: Draft Surface Water Renewal Permit Action
Category: B - Industrial Wastewater
NJPDES Permit No. NJ0005029
Paulsboro Refining Co
Greenwich Twp., Gloucester County

Dear Mr. Eisenmann:

Enclosed is a **draft** New Jersey Pollutant Discharge Elimination System (NJPDES) permit action identified above which has been issued in accordance with N.J.A.C. 7:14A.

Notice of this draft permit action will appear in the *Gloucester County Times* and appeared in the July 8, 2015 *DEP Bulletin*. The *DEP Bulletin* is available on the internet at <http://www.state.nj.us/dep/bulletin>. In accordance with N.J.A.C. 7:14A-15.10(c)1i, the public comment period will close thirty days after its appearance in the newspaper.

As detailed in the *DEP Bulletin* and aforementioned newspaper, written comments or a request that the Department hold a non-adversarial public hearing on the draft document, must be submitted in writing to Pilar Patterson, Chief, Mail Code 401-02B, Division of Water Quality, Bureau of Surface Water Permitting, P.O. Box 420, Trenton, NJ 08625-0420 by the close of the public comment period. All persons, including the applicant, who believe that any condition of this draft document is inappropriate or that the Department's tentative decision to issue this draft document is inappropriate, must raise all reasonable arguments and factual grounds supporting their position, including all supporting materials, during the public comment period.

The Department will respond to all significant and timely comments upon issuance of the final document. The permittee and each person who has submitted written comments will receive notice of the Department's final decision to issue, revoke, or redraft the document.

If you have questions or comments regarding the draft action, please contact Robert Hall at (609) 292-4860.

Sincerely,

A handwritten signature in dark ink that reads "Heather Genievich". The signature is written in a cursive, flowing style.

Heather Genievich
Environmental Specialist 3
Bureau of Surface Water Permitting

Enclosures

c: Permit Distribution List

Masterfile #: 14376; PI #: 46618

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New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Surface Water Permitting

PUBLIC NOTICE

Notice is hereby given that the New Jersey Department of Environmental Protection (Department) proposes to renew the New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Surface Water (DSW) Permit NJ0005029 in accordance with N.J.A.C. 7:14A-1 et seq., and by authority of the Water Pollution Control Act at N.J.S.A. 58:10A-1 et seq., for the following discharge:

Applicant or Permittee

Paulsboro Refining Co LLC
800 Billingsport Road
Paulsboro, NJ 08066

Facility

Paulsboro Refining Co
800 Billingsport Road
Greenwich Twp., Gloucester County

The existing facility discharges treated industrial wastewater into Zone 4 of the Delaware River. The Delaware River is located within the Delaware River Basin and is a tributary to the Delaware Bay. Paulsboro Refining Co. operates a petroleum refinery under the Standard Industrial Classification (SIC) code 2911. Based on data for the period of January 2009 to April 2014, the facility's combined long-term average flow is 9.19 million gallons per day (MGD), while the daily maximum flow is 16.32 MGD. Wastewater treatment at the plant includes screening, oil-water separation, sedimentation/settling, coagulation/flocculation, flotation, neutralization (pH adjustment), activated sludge, rapid sand filtration, and disinfection using sodium hypochlorite, followed by discharge to surface water through DSN 001A.

A draft NJPDES permit renewal has been prepared for this facility based on the administrative record which is on file at the offices of the Department, located at 401 East State Street, Trenton, New Jersey. It is available for inspection, by appointment, Monday through Friday, between 8:30 A.M. and 4:00 P.M. Appointment for inspection may be requested through the Open Public Records Act office. Details are available online at www.nj.gov/dep/opra, or by calling (609) 341-3121. Appointments for inspection of the NJPDES file only or requests for a copy of the draft document (for a nominal charge) may be made by calling Central File at (609) 292-0400.

Written comments or a request that the Department hold a non-adversarial public hearing on the draft document, must be submitted in writing to Pilar Patterson, Chief, or Attention: Comments on Public Notice NJ0005029, at Mail Code 401-02B, Division of Water Quality, Bureau of Surface Water Permitting, P.O. Box 420, Trenton, NJ 08625-0420 by the close of the public comment period, which closes thirty calendar days after publication of this notice in the newspaper. All persons, including the applicant, who believe that any condition of this draft document is inappropriate or that the Department's decision to issue this draft document is inappropriate, must raise all reasonable arguments and factual grounds supporting their position, including all supporting materials, during the public comment period.

The Department will respond to all significant and timely comments upon issuance of the final document. The permittee and each person who has submitted written comments will receive notice of the Department's permit decision.

New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Surface Water Permitting

FACT SHEET

Masterfile #: 14376

PI #: 46618

This fact sheet sets forth the principle facts and the significant factual, legal, and policy considerations examined during preparation of the draft permit. This action has been prepared in accordance with the New Jersey Water Pollution Control Act and its implementing regulations at N.J.A.C. 7:14A-1 et seq. - The New Jersey Pollutant Discharge Elimination System.

PERMIT ACTION: Surface Water Renewal Permit Action

The permittee has applied for a New Jersey Pollutant Discharge Elimination System (NJPDES) Surface Water Renewal Permit Action through an application dated December 20, 2011.

1 Name and Address of the Applicant:

Paulsboro Refining Co. – New Jersey
800 Billingsport Road
Paulsboro, NJ 08066

2 Name and Address of the Facility/Site:

Paulsboro Refining Co. – New Jersey
800 Billingsport Road
Greenwich Township, Gloucester County

3 Receiving Water Discharge Location Information:

A copy of the appropriate section of a USGS quadrangle map indicating the location of the facility and discharge points is included towards the end of this Fact Sheet.

Outfall Designator: 001A

General Information		Watershed Information	
Receiving Water:	Delaware River Zone 4	Downstream Confluences:	Delaware Bay
Via :	Outfall pipe	Receiving River Basin:	Delaware River Basin
Classification (a):	Delaware River Zone 4	WMA (b):	18
Latitude:	39° 50' 41.2"	Watershed:	Cedar Swamp / Repaupo Creek / Clonmell Creek
Longitude:	75° 16' 18"	Subwatershed:	Nehonsey Brook / Clonmell Creek (LDRV to Mantua Creek)
County:	Gloucester	HUC 14 (c):	02040202140010
Municipality:	Greenwich Township	303(d) Impairments (d):	Chlordane (fish tissue), DDT, Dieldrin. Mercury (fish tissue)
Outfall Description			
Outfall Configuration:	Submerged Pipe	Submerged Pipe Characteristics:	Distance from shore = 1260 feet Depth at Mean Low Water Line = 4 feet

Outfall Designator: 002A

General Information		Watershed Information	
Receiving Water:	Delaware River Zone 4	Downstream Confluences:	Delaware Bay
Via :	Outfall pipe	Receiving River Basin:	Delaware River Basin
Classification (a):	Delaware River Zone 4	WMA (b):	18
Latitude:	39° 50' 22.3"	Watershed:	Cedar Swamp / Repaupo Creek / Clonmell Creek
Longitude:	75° 16' 23.9"	Subwatershed:	Nehonsey Brook / Clonmell Creek (LDRV to Mantua Creek)
County:	Gloucester	HUC 14 (c):	02040202140010
Municipality:	Greenwich Township	303(d) Impairments(d):	Chlordane (fish tissue), DDT, Dieldrin, Mercury (fish tissue)
Outfall Description			
Outfall Configuration:	Outfall Pipe		

Footnotes:

- (a) The designated uses for this waterbody classification can be found at N.J.A.C. 7:9B-1.13
- (b) WMA = Watershed Management Area
- (c) HUC 14 = 14 digit Hydrologic Unit Code
- (d) These parameters are listed on Sublist 5 as impaired for this waterbody as per New Jersey's 2012 Integrated Water Quality Monitoring and Assessment Report (includes 305(b) Report and 303(d) List).

Applicable Receiving Water Dilution Factors (a)	
Acute :	2.8
Chronic :	NA
Human Health Non-Carcinogen	NA
Human Health Carcinogenic:	NA

- (a) This dilution factor originates from the study titled "Development of a Tidal Version of the Cormix Models for Application to Discharges in the Delaware Estuary" dated December 1995 and prepared by Limno-Tech, Inc. under the direction of the DRBC. A new dilution study was submitted to the DRBC titled "Dilution Zone Study – Valero Refining Company – New Jersey Final Report" in June 2009, but has not yet been approved by the DRBC and therefore has not been used in the development of effluent limitations in this permit renewal action. The Department only applies acute criteria on the mainstem of the Delaware River, so only an acute dilution factor is necessary.

As per the Surface Water Quality Standards at N.J.A.C. 7:9B, the designated uses for the mainstem of the Delaware River are:

Zone 4 is that part of the Delaware River extending from R.M. 95.0 to R.M. 78.8, the Pennsylvania-Delaware boundary line, including the tidal portions of the tributaries thereof.

The quality of Zone 4 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. industrial water supplies after reasonable treatment;
2. a. maintenance of resident fish and other aquatic life, 64
b. passage of anadromous fish,
c. wildlife;
3. a. recreation - secondary contact above R.M. 81.8,
b. recreation below R.M. 81.8;
4. navigation.

As noted in Section 3 above, the receiving waterbody in which the permittee discharges is impaired for Chlordane (fish tissue), mercury (fish tissue), DDT, and Dieldrin. This facility does not discharges any of these parameters through outfall 001A based on recent sampling results. However, this permit action requires the facility to continue to monitor for theses pollutants on an annual frequency to insure they remain at non-detectable concentrations in the effluent.

4 Facility Description:

The facility is classified as a major discharger by the Department of Environmental Protection (Department) in accordance with the United States Environmental Protection Agency (EPA) rating criteria. Based on Discharge Monitoring Report (DMR) data for the period of January 2009 to April 2014, the facility's combined long-term average flow is 9.19 million gallons per day (MGD), while the daily maximum flow is 16.32 MGD.

Paulsboro Refining Co. operates a petroleum refinery under the Standard Industrial Classification (SIC) code 2911. The facility has been in operation since 1917 producing hydrocarbon products that include gasoline, liquid propane gas, distillate fuels, lubricating oil base stocks, asphalt, and elemental sulfur. It was previously owned by Mobil Oil Corporation and was purchased by Valero in September 1998. PBF Energy Partners LP, the parent company of Paulsboro Refining Company LLC, completed the refinery purchase on December 17, 2010.

An average of 136,700 barrels of crude oil per day was processed at the facility between 2006 and 2013. Processes conducted at the facility include crude desalting, atmospheric and vacuum crude distillation, fluid catalytic cracking, delayed coking, hydrotreating, lube hydrorefining, propane deasphalting, furfural extraction, asphalt production, hydrofluoric acid alkylation, and catalytic reforming.

The refinery operates an onsite wastewater treatment plant (plant) that has a design capacity of 15.84 MGD. Sources of intake water used at the facility include the Delaware River and the Greenwich Township public water supply. Wastewater components that are treated at the plant include refinery process wastewater, recovery well water, cooling water, sanitary wastewater, storm water, wastewater from the sour water stripper, and benzene recovery unit water. An extensive stormwater management system consisting of several basins is operated at the facility where the water collected is subsequently treated at the plant. Additionally, the plant treats wastewater from adjacent facilities that includes Buckeye Pipeline (formerly ExxonMobil Pipeline Company), NuStar Energy L.P. (formerly Valero Logistics and Operations L.P.), ExxonMobil Research and Engineering Company, and ExxonMobil Lubricants and Petroleum Specialties Company. Wastewater components from these offsite facilities include storm water runoff, tank water draws, incidental spills from the loading rack and product return system, truck wash and garage runoff water, steam condensate, service water, lab wash water, demineralized water, contaminated service water from tank farm wash down and steam cleaning, and storm water from the tank and rail car containment area.

Wastewater treatment at the plant includes screening, oil-water separation, sedimentation/settling, coagulation/flocculation, flotation, neutralization (pH adjustment), activated sludge, rapid sand filtration, and disinfection using sodium hypochlorite, followed by discharge to surface water through DSN001A. Additional treatment processes upstream of the plant include ammonia stripping of the sour water, and benzene stripping of the benzene recovery unit water followed by treatment at the plant.

DSN 002A is an emergency discharge point that is only used during periods of intense rainfall to prevent uncontrolled overflow from the stormwater containment areas. Stormwater undergoes sedimentation (settling) in this area prior to discharge.

The permittee withdraws intake water from the Delaware River through an on-site cooling water intake structure. This water is used as make-up water for refinery boilers, cooling towers, miscellaneous refinery processes and the fire water system at a maximum rate of 400 million gallons per month or 13.3 MGD. The five year average influent flow was 7.137 MGD.

The cooling water intake structure is equipped with an intake flume that is used to withdraw river water which is sent directly to the refinery water treatment system. This intake flume extends approximately 36 feet into the Delaware River from the shoreline. There is a trash screen consisting of 18 vertical steel bars that stands 16 feet tall. Two Siemens Model 45A Inside Drive Traveling Water Screens are installed at the river intake pump house. The screens have a 6.3 foot tray width x 24-foot sprocket centers, 304 stainless steel wire cloth, #12 gauge, 3/8" square openings, and a 2" on-center spray nozzle header. There is no fish return system at this time.

A site plan of the facility, schematic of the facility's treatment, and a water flow balance chart are included near the end of the fact sheet.

All residuals generated at the plant are recycled. No sludge wastes are outhauled from the refinery unless the delayed coker unit is down.

Ground water discharges from the pond and emergency retention basin are covered under NJPDES/DGW Permit number NJ0085502. If there are any questions regarding the NJPDES/DGW permit, contact the Bureau of Nonpoint Pollution Control at (609) 292-0407.

5 Type and Quantity of the Wastes or Pollutants:

The Permit Summary Table near the end of this fact sheet contains a summary of the quantity and quality of pollutants treated and discharged from the facility and the proposed effluent limitations.

6 Summary of Permit Conditions:

The proposed effluent limitations and other pertinent information regarding the draft permit are described below:

A. Basis for Effluent Limitations and Permit Conditions - General:

The effluent limitations and permit conditions in this permit have been developed to ensure compliance with the following, as applicable:

1. NJPDES Regulations (N.J.A.C. 7:14A),
2. New Jersey Surface Water Quality Standards (N.J.A.C. 7:9B),
3. New Jersey's 2012 Integrated Water Quality Monitoring and Assessment Report (includes 305(b) Report and 303(d) List),
4. Requirements of the Delaware River Basin Commission (N.J.A.C. 7:9B-1.5(b)1),
5. Existing permit limitations in accordance with N.J.A.C. 7:14A-13.19 and 40 CFR 122.44 (antibacksliding requirements),
6. Permit limitations in accordance with N.J.A.C. 7:9B-1.5(d) (antidegradation requirements),
7. Statewide Water Quality Management Planning Rules (N.J.A.C. 7:15),
8. Technology Based Treatment Requirements or Effluent Limitation Guidelines Requirements (N.J.A.C. 7:14A-13.2 to 13.4),

Technology based limitations are authorized by Section 301 of the Clean Water Act, 40 CFR 122, N.J.S.A. 58:10A-4, and N.J.A.C. 7:14A-13.2(a)1.ii., 13.3(b), and 13.4. In general, technology based effluent limitations are based on Effluent Limitation Guidelines (ELGs), developed by the EPA, or on case-by-case limitations developed through a Best Professional Judgment (BPJ) analysis in cases where ELGs are not available or appropriate. ELGs are minimum technology based requirements applicable on a nation-wide basis and are published in 40 CFR Subchapter N. ELGs consider the category of industry that produce common pollutants taking into account the specific factors unique to a particular type of industry (manufacturing process, type and quantity of pollutants generated, types of treatment facilities available to treat the pollutants, etc.). In cases where ELGs are applicable for surface water dischargers, ELG loading limitations are calculated using the specified concentration value and the production information provided by the permittee. BPJ determinations are authorized by Section 402 (a)(1) of the Clean Water Act.

In accordance with N.J.A.C. 7:14A-13.5, Water Quality Based Effluent Limitations (WQBELs) are imposed when it has been determined that the discharge of a pollutant causes an excursion of criteria specified in the New Jersey Surface Water Quality Standards (SWQS), N.J.A.C. 7:9B-1.1 et seq., and the Federal Water Quality Standards, 40

CFR Part 131. WQBELs are authorized by Section 301 of the Clean Water Act, 40 CFR 122, N.J.S.A. 58:10A-4, and N.J.A.C. 7:14A-13.2 and 13.3. The procedures used to develop WQBELs are contained in the State and Federal Standards. Specific procedures, methodologies, and equations are contained in the current USEPA "Technical Support Document for Water Quality-based Toxics Control" (TSD) (EPA- 505/2-90-001) and are referenced in N.J.A.C. 7:14A-13.5 and 13.6.

Expression of all effluent limitations is in accordance with N.J.A.C. 7:14A-13.14 and 13.15.
Whole effluent toxicity is expressed as a minimum as percent effluent.

B. Description of Applicability under the Effluent Limitation Guidelines:

The ELGs for the Petroleum Refining Point Source Category (40 CFR Part 419) classify refineries into five basic subcategories based on the types of products manufactured and the processes used at the facility. These subcategories and their descriptions of applicability include the following:

Subpart A - Topping Subcategory: - This subpart applies to discharges resulting from the manufacture of petroleum products by topping, catalytic reforming and any additional refinery processes other than thermal processes (coking, vis-breaking, etc.) or catalytic cracking.

Subpart B - Cracking Subcategory: - This subpart applies to discharges resulting from the manufacture of petroleum products by topping, cracking and any additional refinery processes other than the processes specified in Subparts C, D or E.

Subpart C - Petrochemical Subcategory: - This subpart applies to discharges resulting from the manufacture of petroleum products by topping, cracking, petrochemical operations and any additional refinery processes other than the processes specified in Subparts D or E. "Petrochemical operations" shall mean the production of second-generation petrochemicals (i.e. alcohols, ketones, cumene, styrene, etc.) or first generation petrochemicals and isomerization products (i.e. BTX, olefins, cyclohexane etc.) where 15 percent or more of refinery production are first-generation petrochemicals and isomerization products.

Subpart D - Lube Subcategory: - This subpart applies to discharges resulting from the manufacture of petroleum products by topping, cracking, lube oil manufacturing processes and any additional refinery processes other than the processes specified in Subparts C and E.

Subpart E - Integrated Subcategory: - This subpart applies to discharges resulting from the manufacture of petroleum products by topping, cracking, petrochemical operations, lube oil manufacturing and any other refinery process.

Since the Paulsboro Refining Co. refinery includes coking and catalytic cracking operations, the ELGs specified at 40 CFR 419 Subpart A-Topping Subcategory are not applicable. Since lubricating oils are manufactured at Paulsboro Refining Co., the ELGs specified at 40 CFR 419, Subpart B-Cracking Subcategory are not applicable. Since petrochemicals are not manufactured at Paulsboro Refining Co., the ELGs specified at 40 CFR 419 Subpart C - Petrochemical Subcategory and Subpart E – Integrated Subcategory are not applicable. **Consequently, wastewater treated at the facility is appropriately regulated under the ELGs specified at 40 CFR 419, Subpart D-Lube Subcategory.**

Production Based Loading Limitations:

The ELGs for the Petroleum Refining Point Source Category (40 CFR Part 419) contain production-based loading limitations for 5-Day Biochemical Oxygen Demand (BOD₅), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Oil and Grease, Ammonia-Nitrogen, Total Recoverable Chromium, Hexavalent Chromium, Total Recoverable Phenolics and Total Sulfides. These limitations are based on the application of Best Practicable

control Technology currently available (BPT), Best Available control Technology economically achievable (BAT), and Best Conventional pollutant control Technology (BCT).

ELGs are provided for the following parameters as follows:

Pollutants	Treatment Levels					
	Process Wastewater		Contaminated Stormwater		Ballast Water	
BOD ₅	BPT	BCT	BPT	BCT	BPT	BCT
Total Suspended Solids	BPT	BCT	BPT	BCT	BPT	BCT
Chemical Oxygen Demand	BPT	BAT	BPT	BAT	BPT	BAT
Oil and Grease	BPT	BCT	BPT	BCT	BPT	BCT
Ammonia-Nitrogen	BPT	BAT				
Sulfide	BPT	BAT				
Phenolic Compounds	BPT	BAT	BPT	BAT		
Total Chromium	BPT	BAT	BPT	BAT		
Hexavalent Chromium	BPT	BAT	BPT	BAT		
pH	BPT	BCT	BPT	BCT	BPT	BCT

The applicable ELG is shown in **Bold** in the table above.

For conventional pollutants (BOD₅, TSS, Oil and Grease and pH), if both BPT and BCT ELGs are available, BCT limitations are applied. For the pollutants Ammonia, COD, Sulfides, Phenolic Compounds, Total Chromium, and Hexavalent Chromium, if both BPT and BAT ELGs are available, BAT limitations are applied. BPT limitations are based on 40 CFR 419.42, BAT limitations are based on 40 CFR 419.43, and BCT limitations are based on 40 CFR 419.44. Based on guidance provided in the EPA document titled "Guide for the Application of Effluent Limitations Guidelines for the Petroleum Refining Industry" dated June 1985, the applicable BCT and BAT limitations cannot be less stringent than the calculated BPT limitations. Therefore, in all cases, the more stringent of the BPT, BCT and BAT limitations are applied.

The calculation procedure for the Petroleum Refining ELGs take into account the total refinery feedstock rate (RFR) to determine the applicable Size Factor (SF) and the processes utilized to calculate the Refinery Process Configuration (RPC) which in turn is used to determine the applicable Process Factor (PF).

Based on the renewal application submitted for this renewal permit action, the 8-year maximum total refinery feedstock rate has decreased to 161, 100 barrels/day (bbl/day) based on the feedstock rates from 2006 through 2013. However, since this feedstock rate is close to the feedstock rate that was utilized in the existing permit and because the ELGs allow the use of long term feedstock rates, the Department is proposing to continue to utilize this feedstock rate of 168,300 barrels/day (bbl/day) in this renewal permit action instead of recalculating the limitations based on this slightly smaller feedstock rate. This will allow the permittee to vary its production during the course of this permit term which could result in levels equivalent to historic levels or greater.

As described in the existing permit, the existing limitations were based on a total refinery feedstock rate of 168,300 barrels/day (bbl/day) which resulted in a SF of 1.05 in accordance with 40 CFR 419.42(b)(1). The processes listed as being utilized at the refinery at that time included two units for hydrotreating of products that contributed to an increase in the total RPC to 11.38. Therefore, the PF for Paulsboro Refining Co.'s refinery operations was 1.82 in accordance with 40 CFR 419.42(b)(3). Due to this increase in the PF for the refinery, the calculated ELGs became higher which resulted in effluent limitations that were less stringent than the previous limitations.

However, it has come to the Department's attention that counting the new hydrotreating units towards the RPC was a mistake since hydrotreating was not included in the 1974 Flow Model that was used to develop the weighting factors used in these calculations. The weighting factors for these processes should have been given a value of 0 and not have affected the calculated value for the Total Refinery Process Configuration that is used to determine the BPT and BCT limitations for all regulated parameters and BAT limitations for Ammonia (as N) and sulfide (as S). Recalculating the RCF assuming 0 for a weighting factor for hydrotreating results in a total RCF of 9.1, which then results in a process factor of 1.29 in accordance with 40 CFR 419.42(b)(3). This new process factor was used in recalculating the BPT and BCT limitations for all regulated parameters and BAT limitations for Ammonia (as N) and sulfide (as S) as shown in the table below.

Net Limitations:

Net limitations have been imposed for BOD₅, COD, TDS, TSS, Oil and Grease, Ammonia-Nitrogen, Total Recoverable Chromium, Hexavalent Chromium, Total Recoverable Phenolics, and Total Sulfides. Paulsboro Refining Co. is eligible for net limits based on DMR data showing detectable amounts of these pollutants in the intake samples. Therefore, it meets the criteria specified at 40 CFR 122.45 and N.J.A.C. 7:14A-13.4(k).

Paulsboro Refining Co. is required to monitor its intake using a 24-hour composite sample type with the exception of intake Oil and Grease and Total Recoverable Phenolics, which shall be monitored with a grab sample. Only that portion of water used from the river intake is eligible for net limits. This amount shall be reported on the DMR form under the "Intake from Stream" sample point.

Mass (kg/day) limitations are calculated using the procedure below. This calculation procedure is also included in Part IV, Section G, Custom Requirement, Condition 1.a.

$$M_{\text{net}} = M_{\text{gross}} - M_{\text{in}}$$

where:

$$M_{\text{gross}} = Q_{\text{gross}} \times C_{\text{gross}} \times 3.785$$

$$M_{\text{in}} = Q_{\text{in}} \times C_{\text{in}} \times 3.785$$

and,

M_{net} = calculated net mass, kg/day

M_{gross} = mass of pollutant at outfall, kg/day – calculated by the permittee

M_{in} = mass of pollutant at intake, kg/day – calculated by the permittee

Q_{gross} = flow at outfall, MGD, measured by the permittee for a sampling event

C_{gross} = concentration of pollutant at outfall, mg/l - measured by the permittee

Q_{in} = total river water intake flow, MGD, measured by the permittee for a sampling event

C_{in} = concentration of pollutant at intake, mg/l - measured by the permittee

Average M_{net} = Sum of M_{net} values in the monitoring period/number of samples

Maximum M_{net} = Highest recorded M_{net} value for the monitoring period

Treated Stormwater Credit:

The ELGs in the Petroleum Refining Point Source Category include credit for the pollutants BOD₅, TSS, Oil and Grease, Total Recoverable Phenolics, Total Chromium, Hexavalent Chromium and COD in contaminated stormwater that is treated with process wastewater. As the ELGs only establish credit for treated stormwater, the permittee must route any stormwater through the treatment plant to be eligible for this credit. As authorized by 40 CFR Part 419.43(f) and 40 CFR 419.43(d) and 40 CFR 419.44(e) the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff times the Effluent Limitation Factors listed in the following table:

Contaminant	Daily Max Factors (lbs per 1000 gallons of stormwater flow)	Monthly Average Factors (lbs per 1000 gallons of stormwater flow)
<u>BCT limitations:</u>		
BOD5	0.40	0.22
TSS	0.28	0.18
Oil & Grease	0.13	0.067
<u>BAT limitations:</u>		
Total Recoverable Phenolics	0.0029	0.0014
Total Chromium	0.005	0.0018
Hexavalent Chromium	0.00052	0.00023
COD	3.0	1.5

Thus, the stormwater allocation values (kg/day) shall be calculated using the following equations:

Monthly Average Stormwater Allocation (SW_{avg}) = (Monthly Total Stormwater Flow, 1000 gallons/Number of days in the month) x (Monthly Average Effluent Limitation Factor for Pollutant in lbs/1000 gallons)/2.2

Daily Maximum Stormwater Allocation (SW_{max}) = (Monthly Total Stormwater Flow, 1000 gallons)/Number of days in the month) x (Daily Maximum Effluent Limitation Factor for Pollutant in lbs/1000 gallons)/2.2

The stormwater flow rate used in the calculations will be the monthly average stormwater flow in 1000 gallons. This value shall also be reported on the DMR form as “Flow Total” under the “Precipitation” sample point. This calculation procedure is also included in Part IV, Section G, Custom Requirement, Condition 2 (a).

Treated Ballast Water Credit:

The ELGs in the Petroleum Refining Point Source Category also include credit for the pollutants BOD₅, TSS, COD and Oil and Grease in treated ballast water. The existing permit contained an allocation for ballast water. However, at the request of the permittee, the allocation is being removed during this permit renewal since the facility never treats and does not plan to treat ballast water in the future.

Calculating Final Effluent Load to Evaluate Compliance:

Taking into consideration the applicability of net limits and credit for pollutants in contaminated stormwater, the final loading values that will be compared against the effluent limitation for compliance purposes are calculated by subtracting the load contributed by stormwater from the net load for individual pollutants. This value shall be reported on the DMR form under the “Effluent Adjusted Value” sample point using the calculation procedure below:

Effluent Adjusted Value = Effluent (Net) – Effluent (Precip.)

Monthly Average Effluent Adjusted Value = Average M(net) – SW_{avg}

Daily Maximum Effluent Adjusted Value = Highest M(net) – SW_{max}

where:

Effluent (Net) = Effluent (Gross) – Effluent (Intake)

Effluent (Rain) = Load contributed by stormwater

and,

Average M_{net} = monthly average net loading in kg/day calculated from the equations above

Maximum M_{net} = Daily maximum net loading in kg/day calculated from the equations above

SW_{avg} = monthly average stormwater allocation in kg/day calculated from the equations above

SW_{max} = daily maximum stormwater allocation in kg/day calculated from the equations above

This calculation procedure is also included in Part IV, Section G, Custom Requirement, Condition 4. In the event that there is no stormwater through the treatment plant, the respective credits do not apply and the Effluent Adjusted Value is the same as the reported Effluent Net Value.

C. Basis and Derivation for Effluent Limitations and Monitoring Requirements – Specific for DSN 001A:

All permit limitations and conditions in this permit action, are equal to or more stringent than those contained in the existing permit action. As a result, this permit action satisfies the federal and state anti-degradation regulations at 40 CFR 131.12 and N.J.A.C. 7:9B-1.5(d), and no further anti-degradation analysis is necessary.

Monitoring frequencies and sample types are in accordance with N.J.A.C. 7:14A-14, unless specified otherwise in the permit. In accordance with N.J.A.C. 7:14A-14.2, the permittee may submit a written request for a modification of the permit to decrease monitoring frequencies for non-limited parameters listed in Part III if site specific conditions indicate the applicability of such a modification.

1. Flow:

This permit does not include a numerical limitation for effluent flow. Monitoring conditions are applied for effluent flow pursuant to N.J.A.C. 7:14A-13.13. Monitoring conditions are also applied for intake flow and precipitation flow as described previously.

Intake and Effluent flow shall be monitored on a **continuous** basis and the sample type shall be **metered**. Monitoring for Intake Flow is a new requirement and will provide important information to compliment the required Section 316(b) studies as described later in this document. Flow Total for precipitation shall be reported on a **monthly** basis. The sample type for flow total shall be **measured**.

2. 5-Day Biochemical Oxygen Demand (BOD₅):

The monthly average loading limitation is retained from the existing permit in accordance with N.J.A.C. 7:14A-13.19 and is applied on a net basis with calculated adjustments for stormwater. This limit is based on the DRBC 20 day carbonaceous biochemical (first stage) oxygen demand (CBOD₂₀) wasteload allocation of 3,192 lbs/day (1448 kg/d) which is equivalent to 2,456 lbs/day (1114 kg/d) BOD₅ as a thirty (30) day average. The percent removal limitation of 89.25% is also retained from the existing permit in accordance with N.J.A.C. 7:14A-13.19 and is based on the zone percent reduction for Zone 4 of the Delaware River as per the DRBC's Water Quality Regulations. The monthly average loading and percent removal limitations are summarized in DRBC's Status of CBOD₂₀ Wasteload Allocation Report dated July 1993.

The daily maximum loading limitation of 1,851 kg/d is based on the ELGs for the Petroleum Refining Point Source Category at 40 CFR Part 419, Subpart D and is applied on a net basis. This ELG was recalculated in this renewal permit as explained in Section B above due to a change in the process factor used in the calculations.

Monitoring and reporting requirements for influent and effluent BOD₅ concentrations, which are used to calculate the BOD₅ % removal, have been retained from the existing permit. Additionally, monitoring and reporting requirements are applied for intake BOD₅ in order to calculate net values. Based on the existing permit, influent sampling shall be performed before the dissolved air floatation unit using a grab sample.

Monitoring is also imposed for BOD₅, Precipitation to allow for stormwater credit in accordance with the ELGs at 40 CFR 419.44(e).

The monitoring frequency of **four times per month** is being carried forward from the existing permit. The sample type shall be a **24 hour composite** for both the effluent sample and the intake sample.

3. Chemical Oxygen Demand (COD):

Loading limitations are based on the ELGs for the Petroleum Refining Point Source Category at 40 CFR Part 419, Subpart D and are applied on a net basis. These limitations are a monthly average of 6,825 kg/d and a daily maximum of 13,132 kg/d. These ELGs were recalculated in this renewal permit as explained in Section B above due to a change in the process factor used in the calculations.

The monitoring and reporting requirement for monthly average and daily maximum concentration is retained from the existing permit. Additionally, monitoring and reporting requirements are applied for intake COD in order to calculate net values.

Monitoring is also imposed for COD, Precipitation to allow for stormwater credit in accordance with the ELGs at 40 CFR 419.43(f).

The monitoring frequency of **weekly** is being carried forward from the existing permit. The sample type shall be a **24 hour composite** for both the effluent sample and the intake sample.

4. Total Suspended Solids (TSS):

Loading limitations are based on the ELGs for the Petroleum Refining Point Source Category at 40 CFR Part 419, Subpart D and are applied on a net basis. These limitations are a monthly average of 827 kg/d and a daily maximum of 1,293 kg/d. These ELGs were recalculated in this renewal permit as explained in Section B above due to a change in the process factor used in the calculations.

Concentration limitations are included as authorized by N.J.A.C. 7:14A-13.14(a)6 and have been retained from the existing permit in accordance with N.J.A.C. 7:14A-13.19. Based on the Effluent Quality Requirements of the DRBC Water Quality Regulations, Section 3.10.4, the concentration limitations are a monthly average of 30 mg/L and a weekly average of 45 mg/L and are applied on a net basis. Monitoring for TSS Net as a daily maximum concentration is also required. Additionally, monitoring and reporting requirements are applied for intake TSS in order to calculate net values.

Monitoring is also imposed for TSS, Precipitation to allow for stormwater credit in accordance with the ELGs at 40 CFR 419.44(e).

The monitoring frequency of **weekly** is being carried forward from the existing permit. The sample type shall be a **24 hour composite** for both the effluent sample and the intake sample.

5. Total Dissolved Solids (TDS):

The daily maximum loading limitation of 60,909 kg/day is retained from the existing permit in accordance with N.J.A.C. 7:14A-13.19 and is applied on a net basis. This limitation was originally imposed in a major modification dated September 22, 2003 that changed the effluent TDS loading limitation from 40,909 kg/day to 60,909 kg/day and has been in effect since September 1, 2004. This modified TDS limit was approved by DRBC in a letter dated July 31, 2002 and subsequently included in the permit to accommodate an expected increase in the effluent TDS levels resulting from the installation of a new air pollution control device, a Belco stack gas scrubber. This device uses a wet scrubbing process to reduce the quantity of sulfur oxides and particulate matter in air emissions from Paulsboro Refinery's fluid catalytic cracking unit. The scrubber byproduct stream consisting of a saturated salt solution is treated and discharged to the wastewater stream,

resulting in an increase in the effluent TDS loading. Monitoring and reporting requirements for monthly average loading and concentration as well as daily maximum concentration are retained from the existing permit. Additionally, monitoring and reporting requirements are applied for intake TDS in order to calculate net values.

The monitoring frequency of **weekly** is being carried forward from the existing permit. The sample type shall be a **24 hour composite** for both the effluent sample and the intake sample.

6. pH:

The effluent limitations are retained from the existing permit and are based on the ELGs for the Petroleum Refining Point Source Category at 40 CFR Part 419, Subpart D and are consistent with the Effluent Quality Requirements of the DRBC Water Quality Regulations, Section 4.30.5. These limitations are a minimum of 6.0 Standard Units (S.U.) and a maximum of 9.0 S.U.

The monitoring frequency of **weekly** is being carried forward from the existing permit. The sample type shall be a **grab** sample.

7. Temperature:

The daily maximum limitation of 40 degrees centigrade is retained from the existing permit in accordance with N.J.A.C. 7:14A-13.19. This limitation was initially imposed in the renewal permit dated August 1995 and was based on a thermal water quality study submitted to the Department in April 1995. The monitoring requirement for monthly average has also been retained from the existing permit.

The monitoring frequency of **continuous** is being carried forward from the existing permit. The sample type shall be **metered**.

8. Color:

The daily maximum limitation of 100 units on the platinum cobalt scale is retained from the existing permit in accordance with N.J.A.C. 7:14A-13.19. This limitation is consistent with the Effluent Quality Requirements of the DRBC Water Quality Regulations, Section 4.30.5. The monitoring requirement for monthly average has also been retained from the existing permit.

The monitoring frequency of **annual** is being carried forward from the existing permit. The sample type shall be a **grab** sample.

9. Bacterial Indicator (Fecal Coliform and E. Coli):

Since sanitary wastewater flow is routed to the treatment plant, effluent limitations for a bacterial indicator parameter are retained from the existing permit in accordance with N.J.A.C. 7:14A-13.19. However, the existing indicator parameter of fecal coliform is being changed to E. coli.

As discussed in the September 19, 2005 proposal for amendments to the SWQS at N.J.A.C. 7:9B-1.14(d)1, fecal coliform historically had been the preferred indicator of fecal matter in ambient water by the USEPA and the Department. However, USEPA no longer supports the use of fecal coliform as a reliable indicator of human illness risk from primary contact recreation. The USEPA now recommends the use of E. coli and enterococcus as pathogen indicators for fresh waters and marine waters respectively (USEPA's draft *Implementation Guidance for Ambient Water Quality Criteria for Bacteria*, November 2003). Therefore, the Department has replaced the fecal coliform criteria for those waters designated for primary contact recreation (FW2, SE1 and SC classifications) at N.J.A.C. 7:9B-1.14(c)1ii(1) and (2) with enterococcus (SE1 and SC waters) and E. coli indicators (FW2 waters), respectively.

Based on the monitoring data from January 2009 through April 2013, the monthly average for fecal coliform was 4.91 colonies per 100 mL. This value is significantly below the effluent standard of 200 colonies per 100 mL found at N.J.A.C. 7:14A-12.5. The limitations of 200 colonies per 100 mL as a monthly geometric average and 400 colonies as a weekly geometric average were imposed in the existing permit.

The Department has determined that monitoring for fecal coliform is no longer necessary based on the repealed criteria for fecal coliform and the new criteria for E. Coli. Therefore, the fecal coliform limitations are being replaced with an E. Coli effluent limitation of 126 colonies per 100 mL as a monthly geometric mean in this renewal as there is currently no available E. Coli effluent data. The permittee shall also monitor and report the instantaneous maximum. E. Coli is the appropriate indicator parameter for bacteria consistent with N.J.A.C. 7:9B-1.14(d)1. This change is consistent with the Department's antidegradation policies as E. coli is considered to be an equivalent bacterial indicator.

In accordance with N.J.A.C. 7:14A-6.4(a), a schedule to achieve compliance with the new monthly average limit has been included in this permit. Initial monthly average and daily maximum monitoring and reporting requirements have been included as authorized by N.J.A.C. 7:14A-6.2(a)14. The compliance schedule time period is established at 12 months to allow the permittee sufficient time to make necessary changes to the treatment system to achieve compliance with the new limitations. Please refer to the Compliance Schedule section of this Fact Sheet for further details.

The monitoring frequency is being established at **weekly**. The sample type shall be **grab**.

10. Oil and Grease:

Loading limitations are based on the ELGs for the Petroleum Refining Point Source Category at 40 CFR Part 419, Subpart D and are applied on a net basis. These limitations are a monthly average of 310 kg/d and a daily maximum of 589 kg/d. These ELGs were recalculated in this renewal permit as explained in Section B above due to a change in the process factor used in the calculations.

The concentration limitations are retained from the existing permit and are based on N.J.A.C. 7:14A-12.8(c). These limitations are a monthly average of 10 mg/L and a daily maximum of 15 mg/L and are also applied on a net basis. Additionally, monitoring and reporting requirements are applied for intake Oil and Grease in order to calculate net values.

Monitoring is also imposed for Oil and Grease, Precipitation to allow for stormwater credit in accordance with the ELGs at 40 CFR 419.44(e).

Based on the existing permit, the monitoring frequency shall be **weekly** and the sample type shall be a **grab** sample.

11. Chlorine Produced Oxidants (CPO):

Monitoring and reporting requirements for the monthly average and daily maximum concentrations of effluent CPO are retained from the existing permit. This is based on the fact that sodium hypochlorite is used for disinfection at the last treatment step and Paulsboro Refinery is not required to dechlorinate the effluent before discharging to the Delaware River. Based on a review of DMR data for the period of January 2009 to April 2014, quantifiable amounts of CPO are discharged in the effluent. However, no CPO WQBELs are proposed for the renewal permit until such time that a determination is completed on whether WQBELs for CPO will be imposed for discharges to the mainstem of the Delaware or the permittee proposes an expansion beyond the current flow.

The existing monitoring frequency of **monthly** is being carried forward from the existing permit. The sample type shall be a grab **sample**.

12. Ammonia (Total as N):

Loading limitations are based on the ELGs for the Petroleum Refining Point Source Category at 40 CFR Part 419, Subpart D and are applied on a net basis. These limitations are a monthly average of 393 kg/d and a daily maximum of 858 kg/d. These ELGs were recalculated in this renewal permit as explained in Section B above due to a change in the process factor used in the calculations.

A monthly average concentration limitation of 35 mg/L, on a net basis, was imposed in the existing permit based on the Effluent Quality Requirements of the DRBC Water Quality Regulations, Section 4.30.5 and is retained in the renewal permit pursuant to N.J.A.C. 7:14A-13.19. Monitoring and reporting of the daily maximum concentration has also been retained from the existing permit. Additionally, monitoring and reporting requirements are applied for intake ammonia (as N) in order to calculate net values.

The existing monitoring frequency of **weekly** is being carried forward from the existing permit. The sample type shall be a 24 hour composite for both the effluent sample and the intake sample.

13. Total Phosphorus:

The Department has begun reviewing each watershed drainage area in the state of New Jersey. Each of these watersheds, including the one into which this facility discharges, will be investigated for parameters that are not meeting criteria specified in the SWQS at N.J.A.C. 7:9B. Nutrients have been shown to be a major source of impairment in many watersheds, and Phosphorus in particular is a pollutant of concern.

Therefore, the Department is requiring monitoring and reporting of Phosphorus. If Phosphorus is found to be a pollutant of concern in the Delaware River, the Department will determine the Total Maximum Daily Load (TMDL) for phosphorus for the Delaware River, and how that load should be divided among its sources. Until such time as the TMDL is established, apportioned, and can be incorporated into permits for Delaware River Zone 3 dischargers, the Department has chosen to require monitoring and reporting only.

Consistent with the existing permit, the monitoring frequency is **once per quarter** with a **24-hour composite** sample type.

14. Sulfide:

Loading limitations are based on the ELGs for the Petroleum Refining Point Source Category at 40 CFR Part 419, Subpart D and are applied on a net basis. These limitations are a monthly average of 5.48 kg/d and a daily maximum of 12.20 kg/d. These ELGs were recalculated in this renewal permit as explained in Section B above due to a change in the process factor used in the calculations.

The monitoring and reporting requirement for monthly average and daily maximum concentration is retained from the existing permit. Additionally, monitoring and reporting requirements are applied for intake sulfide in order to calculate net values.

The existing monitoring frequency of **weekly** is being carried forward from the existing permit. The sample type shall be a **24 hour composite** for both the effluent sample and the intake sample.

15. Total Recoverable Phenolics:

Loading limitations are based on the ELGs for the Petroleum Refining Point Source Category at 40 CFR Part 419, Subpart D and are applied on a net basis. These limitations are a monthly average of 5.18 kg/d and a daily maximum of 13.75 kg/d. This daily maximum ELG is BPT based and was recalculated in this renewal permit as explained in Section B above due to a change in the process factor used in the calculations.

Monitoring and reporting of monthly average and daily maximum concentration has been retained from the existing permit. Additionally, monitoring and reporting requirements are applied for intake total recoverable phenolics in order to calculate net values.

Monitoring is also imposed for Total Recoverable Phenolics, Precipitation to allow for stormwater credits in accordance with the ELGs at 40 CFR 419.43(f).

The existing monitoring frequency of **weekly** is being carried forward from the existing permit. The sample type shall be a **grab** sample for both the effluent and intake samples.

16. Total Chromium:

Loading limitations are based on the ELGs for the Petroleum Refining Point Source Category at 40 CFR Part 419, Subpart D and are applied on a net basis. These limitations are a monthly average of 6.06 kg/d and a daily maximum of 17.40 kg/d. These BAT ELG based limitations were calculated in the existing permit and are being carried forward in this renewal permit since the feedstock rates have not substantially changed since the last permit renewal and since the BAT ELGs are more stringent than the BPT ELGs.

The monitoring and reporting requirement for monthly average and daily maximum concentration has been retained from the existing permit. Additionally, monitoring and reporting requirements are applied for intake chromium in order to calculate net values.

Monitoring is also imposed for Total Chromium, Precipitation to allow for stormwater credits in accordance with the ELGs at 40 CFR 419.43(f).

The existing monitoring frequency of **monthly** is being carried forward from the existing permit. The sample type shall be a **24 hour composite** for both the effluent sample and the intake sample.

17. Hexavalent Chromium:

Loading limitations are based on the ELGs for the Petroleum Refining Point Source Category at 40 CFR Part 419, Subpart D and are applied on a net basis. These limitations are a monthly average of 0.50 kg/d and a daily maximum of 1.12 kg/d. These BAT ELG based limitations were calculated in the existing permit and are being carried forward in this renewal permit since the feedstock rates have not substantially changed since the last permit renewal and since the BAT ELGs are more stringent than the BPT ELGs.

The daily maximum concentration limitation of 0.1 mg/L has been retained from the existing permit in accordance with N.J.A.C. 7:14A-13.19. The monitoring and reporting requirement for monthly average concentration has been retained from the existing permit. Additionally, monitoring and reporting requirements are applied for intake Hexavalent Chromium in order to calculate net values.

Monitoring is also imposed for Hexavalent Chromium, Precipitation to allow for stormwater credits in accordance with the ELGs at 40 CFR 419.43(f).

The existing monitoring frequency of **twice per month** is being carried forward from the existing permit. The sample type shall be a **24 hour composite** for both the effluent sample and the intake sample. As authorized by N.J.A.C. 7:14A-13.14(b) 3, monitoring data for Hexavalent Chromium shall be expressed as dissolved.

18. Methyl Tertiary Butyl Ether (MTBE) and Tertiary Butyl Alcohol (TBA):

MTBE and TBA have the potential to be present in contaminated groundwater, which is one of the components treated at the refinery wastewater treatment plant. The existing permit has a semi-annual monitoring requirement for MTBE and TBA. Review of the monitoring report data shows that MTBE is discharged in quantifiable amounts in the effluent. Since TBA has not been detected, the Department has

determined it is appropriate to remove this parameter from the permit during this renewal action. Since the groundwater remediation systems that contribute to the wastewater treatment plant are expected to continue, this will likely result in the continued presence of low levels of MTBE. Therefore, monitoring and reporting requirements for MTBE is being retained in the proposed permit renewal on the **semi-annual** WCR. Based on the existing permit, the sample type shall be a **grab**.

19. Whole Effluent Toxicity (WET):

Acute Wet

Section 101(a) of the Clean Water Act (CWA) establishes a national policy of restoring and maintaining the chemical, physical and biological integrity of the Nation's waters. In addition, section 101(a)(3) of the CWA and the State's SWQS at N.J.A.C. 7:9B-1.5(a)4 state that the discharge of toxic pollutants in toxic amounts is prohibited. Further, 40 CFR 122.44(d) and N.J.A.C. 7:14A-13.6(a) require that where the Department determines using site-specific WET data that a discharge causes, shows a reasonable potential to cause, or contributes to an excursion above the SWQS, the permitting authority must establish effluent limits for WET. In order to satisfy the requirements of the CWA, the State's SWQS and the NJPDES Regulations, the need for a WQBEL for WET was evaluated for this discharge.

In order to determine the need for a WET WQBEL, the Department has analyzed all available WET effluent data. In general, an acceptable data set consists of, at a minimum, 10 data values including the most recent 2½ years of data collection. Based on the review of the applicable data set, the Department has concluded the following:

- After review of the applicable data set, WET was found in quantifiable amounts in the effluent. Based on effluent data from January 2009 through April 2014, Chronic WET results showed 20 detected values with an average result of 35.6%. Only one non-detectable value (i.e. >100%) was shown in the data set for this time period. For Acute WET, based on the same time period, there were 8 non-detectable values reported and 3 detectable values reported with an average value of 85.3%. Therefore, further analyses have been conducted for WET.

Cause Analysis:

For WET, a cause analysis was conducted in accordance with N.J.A.C. 7:14A-13.5. When the maximum effluent value (in toxic units) exceeds the applicable site specific WLA (in toxic units), the discharge is shown to cause an exceedance of the SWQS. Only a cause analysis was performed for Acute WET since the Department does not impose chronic criteria on the mainstem of the Delaware River as chronic criteria is under the jurisdiction of the DRBC.

Using the steady state mass balance equation, an acute WLA of 8.4 TU_as was developed utilizing the narrative criteria for toxic substances (general) specified in the SWQS at N.J.A.C. 7:9B, acute dilution factor of 2.8, the study titled "Development of a Tidal Version of the Cormix Models for Application to Discharges in the Delaware Estuary" dated December 1995 and prepared by Limno-Tech, Inc. under the direction of the DRBC. Consistent with the recommendations of section 2.3.3 of the TSD, a value of 0.3 acute toxic unit (TU_a) was used to interpret the narrative water quality criteria for WET contained at N.J.A.C. 7:9B-1.14(c) (see Response to Comments 13-74 through 13-89, 29 NJR 1861, (May 5, 1997)).

Review of the acute WET data set indicates the maximum effluent data value to be 1.18 TU_as (i.e. an LC50 = 85%). Since the maximum reported effluent data value exceeds the applicable site specific WLA of 0.84 TU_as, the discharge causes an exceedance of the acute interpretation of the narrative criteria for WET identified in the SWQS.

Water Quality Based Effluent Limitation Derivation:

Since the discharge was found to cause and have reasonable potential to cause an exceedance of the acute interpretation of the narrative criteria for WET identified in the SWQS, a WQBEL has been calculated in accordance with N.J.A.C. 7:14A-13.6(a), 40 CFR 122.44(d), and USEPA's TSD.

To enable a comparison between acute and chronic WET limits, the acute WLA (WLA_a) was translated to equivalent chronic toxic units (WLA_{ac}) by multiplying the WLA_a by a default acute to chronic ratio (ACR) of 10.

The acute WLAs were then converted to an acute Long Term Average (LTA_{ac}) of 2.6971 TU_{acs} using a default acute coefficient of variation (CV) of 0.6, and a multiplier of 0.321. Those multipliers are based on the 99th percentile consistent with Response to Comments 13-74 through 13-89, 29 NJR 1861 and are found on Page 102 of the TSD. The resultant long term average values were evaluated and the more protective (e.g. lower) value selected for translation into a daily maximum WET limit using the applicable 99th percentile multiplier, as found on Page 103 of the TSD.

The daily maximum acute WET limit of 2.6971 TU_{acs} was then converted to a permit limitation expressed as an LC50. The resultant applicable limitation is an $LC50 = 119\%$ effluent. However, an acute WET limit of $LC50 > 100\%$ effluent indicates that this limit is beyond the sensitivity of the acute toxicity testing for a definitive measurement of WET. Therefore, the applicable limitation then becomes an $LC50 = 100\%$. This is also the effluent limitation that was imposed in the existing permit and was later stayed via a letter dated June 3, 2010 since the permittee has submitted an updated site-specific dilution study to the DRBC as required by the Response to Comments document found in the final permit issued on April 4, 2007. However, this study has not been approved by the DRBC to date. Therefore, the Department is obligated to impose the effluent limitation of an $LC50 \geq 100\%$. However, this limitation was never effective in the last permit cycle due to the June 3, 2010 stay letter.

Based on the fact that an existing stay letter dated June 3, 2010 acknowledges that the limitation should be stayed until the approval of the new dilution study submitted to the DRBC, the Department will continue to stay this limitation in the renewal permit until such time as a new dilution factor is available for calculating the WET WQBEL. The permittee need not request a stay for this WET limitation as it will be stayed administratively at the time of permit issuance. As discussed below, the permittee shall meet an acute WET Action Level equal to an $LC50$ of $LC \geq 50\%$.

On January 5, 2009 the New Jersey Pollutant Discharge Elimination System (NJPDDES) Rules were readopted. This readoption repealed N.J.A.C. 7:14A-5.3(a) which contained the state minimum effluent standard for acute WET and instead adopted an acute WET action level of $LC50 \geq 50\%$ at N.J.A.C. 7:14A-13.18(f). Therefore, consistent with this requirement, the existing and effective acute WET limitation of $LC50 \geq 50\%$ is being replaced with an acute WET action level of $LC50 \geq 50\%$ in this renewal. Monitoring and reporting will be required to determine whether the discharge causes, shows a reasonable potential to cause, or contributes to an excursion above the SWQS.

Imposing an action level for acute WET will be equally protective of water quality as an effluent limit in this circumstance, since the violation of either the WET limitation or the action level carries with it the same enforceable permit condition to initiate the Toxicity Reduction and Implementation Requirements (TRIR), in order to correct the toxicity problem should this value be exceeded. As a result, the Department anticipates there will be no change in water quality as a result of this change. This change satisfies the antibacksliding provisions at N.J.A.C. 7:14A-13.19, which incorporate Section 402(o)3 of the Federal Clean Water Act, because it includes the TRIR provisions. Specifically, Section 402(o)3 prohibits the revision of an effluent limit "if the implementation of such limitation would result in a violation of a water quality standard." In this circumstance, violation of either the numerically identical action level or

an effluent limitation will trigger an enforceable permit condition to conduct a TRIR in order to address or prevent a violation of a water quality standard.

During the Department's review of the Material Safety Data Sheets (MSDS) for the newly approved boiler and cooling water additives found under Section N. below, it was found that many of the additives were more toxic to *Ceriodaphnia dubia* than to *Pimephales promelas*. Since the previous WET species characterization was performed a long time ago (1998) and resulted in an unusual finding (i.e. *Pimephales promelas* being more sensitive species), the Department is imposing species characterization in this renewal permit to determine if a change in species is warranted. Therefore, the test species method to be used for acute testing shall be the Fathead minnow (*Pimephales promelas*) 96 hr definitive test and the *Ceriodaphnia dubia* 48 hr definitive test. Multi-species testing requirements for acute toxicity are imposed in accordance with N.J.A.C. 7:9B-1.5(f)1.i and the recommendations in the USEPA's "Technical Support Document for Water Quality Based Toxics Control (EPA/505/2-90-001), March 1991" (TSD), and are consistent the Regulations Governing the Certification of Laboratories and Environmental Measurements (N.J.A.C. 7:18). Upon submission of the results of the acute toxicity characterization study, the Department will designate the more appropriate species for ongoing monitoring for acute toxicity. Such selection is based on the freshwater characteristics of the receiving stream, the existing permit, N.J.A.C. 7:9B-1.5 and N.J.A.C. 7:18, the Regulations Governing the Certification of Laboratories and Environmental Measurements (N.J.A.C. 7:18).

The Toxicity Reduction Implementation Requirements (TRIR) are included in accordance with N.J.A.C. 7:14A-13.17(a), 7:14A-6.2(a)5 and recommendations in Section 5.8 of the TSD. The requirements are necessary to ensure compliance with the applicable WET limitation on its effective date and to expedite compliance with the WET limitation should exceedances of the WET limitation occur. As included in section B.1 of the TRIR requirements, the initial step of the TRIR is to identify the variability of the effluent toxicity and to verify that a consistent toxicity problem does in fact exist.

The monitoring for acute WET shall be **semi-annual**. The sample type shall be **composite**.

Chronic WET

Currently, the DRBC is developing a wasteload allocation for chronic toxicity. A report entitled "Wasteload Allocations for Volatile Organics and Chronic Toxicity for Point Sources Discharging to the Delaware Estuary" has been issued by the DRBC, but until the DRBC formally issues wasteload allocations for this parameter, the Department has determined that a "monitor only" requirement in this permit for chronic WET will be carried forward from the existing permit. This information is required to be submitted pursuant to N.J.A.C. 7:14A-6.2(a)14 and N.J.A.C. 7:14A-13.5(1). Upon finalization of the above referenced DRBC report, the Department will determine whether a WQBEL for Chronic WET is necessary for the protection of water quality. If a WET limitation is deemed necessary, that limitation will be incorporated into the permit at renewal.

The test species method to be used for chronic testing shall be the Fathead minnow (*Pimephales promelas*) 7-day larval survival and growth test, 40 CFR 136.3, method 1000.0. Such selection is based on the freshwater characteristics of the receiving stream, the existing permit, N.J.A.C. 7:9B-1.5 and the Department's "Chronic Toxicity Testing Specifications for Use in the NJPDES Permit Program" document. This document is included as Appendix A of this permit, in accordance with N.J.A.C. 7:14A-6.5, 7:14A-11.2(a)2.iv. and 40 CFR Part 136. The NJPDES Biomonitoring Report Form-Chronic Toxicity Test submitted to the DRBC shall include the Chronic Toxicity test results expressed as IC25 and NOEC to satisfy the requirements of the DRBC.

The monitoring for chronic WET shall be **quarterly**. The sample type shall be **composite**.

Effluent samples for conducting WET testing are to be collected after the last treatment step, consistent with the collection location for all other parameters.

20. Foam: The narrative foam permit condition is based on N.J.A.C. 7:14A-12.6.

21. Toxic Metals, Organic Compounds, and Cyanide:

In accordance with N.J.A.C. 7:14A-13.6(a), a WQBEL shall be imposed when the Department determines pursuant to N.J.A.C. 7:14A-13.5 that the discharge of a pollutant causes an excursion above a SWQS.

In order to determine the need for toxic pollutant specific WQBELs, the Department has analyzed all effluent data sets made available to the Department. Acceptable data sets generally consist of, at a minimum, 10 data values including the most recent 2½ years of data collection. A pollutant is considered discharged in “quantifiable amounts” when an exact amount of that pollutant is measured equal to or above the detection level reported by a laboratory analysis (refer to the “Monitoring Report Reference (MRF) Manual” for further information). Based on the review of the data sets, the Department has concluded the following:

- The existing permit contained annual and semi-annual (2005 through 2013) sampling for all acids, base/neutrals, pesticides, metals, and volatile organics. All of these toxics were not detected in the effluent, with the exception of those listed in the table below. Since these pollutants (with the exception of zinc) were detected at levels that would not cause or have reasonable potential to cause an excursion of the SWQS, or there was no acute SWQS available, or there is not sufficient data to do a cause analysis, these toxic pollutants do not have effluent limitations proposed in the draft permit at this time. However, continued **annual** monitoring and reporting requirements have been included in this permit action based on N.J.A.C. 7:14A-13.5(k)3 and the need to re-evaluate the necessity for WQBELs upon renewal of the permit (based on the recommendations of section 3.1 of the EPA TSD).
- Considering the above referenced annual and semi-annual WCR data, the following parameters were detected in the effluent from 2005 through 2014:

Parameter	Results, ug/L	Parameter	Results, ug/L
Arsenic	5.3, 8.9, 6.0, 4.2, 3.3, <3.7	Selenium	18.2, 9.1, 14.9, 14.9, 10.6, 14.3, 17.6
Barium	<4, 28.3, 7.5, <9.2, <5.3	Zinc	22.3, 9.3, 16, 40, 15.9, 27.2, 9.7, 59.2, 37.2, 18.7, 43.7
MTBE	<1, <1, <1, 29, 30, 22, 11, 3, 3, 1, 12, 39, 5, 1.5	Nickel	4.5, 7, 7.5, 5.5, <5.8, <4.4, <5.7

- Since there is acute criteria and sufficient data for performing a cause analysis for zinc, the Department performed an analysis to determine if a WQBEL is warranted in accordance with N.J.A.C. 7:14A-13.5.

Quantified Pollutant Analysis Methodology:

For each pollutant discharged in quantifiable amounts in the effluent, a cause analysis was conducted using the procedures specified in the USEPA TSD in accordance with N.J.A.C. 7:14A-13.5. The cause analysis consists of a comparison between the pollutant’s maximum effluent concentration value (or average value of a long term data set in the case of criteria with an averaging period longer than one year) and the pollutant’s applicable site specific WLA.

Using the steady state mass balance equation, an acute WLA were developed utilizing the applicable SWQS, and an acute dilution factor of 2.8 from the study titled “Development of a Tidal Version of the Cormix Models for Application to Discharges in the Delaware Estuary” dated December 1995 and prepared by Limno-Tech, Inc. under the direction of the DRBC.

The applied criteria is based on a default hardness value of 100 mg/L of CaCO₃ and a water effect ratio (WER) of 1.0

A default translator of 0.950 was utilized to convert total recoverable data to its dissolved equivalent for the cause analyses for aquatic criteria. Translator values are based on the conversion factors for dissolved metals at 40 CFR Part 131 and N.J.A.C. 7:14A-13.6.

Quantified Pollutant Analysis Results:

Cause analyses were conducted on total recoverable zinc. As a result of the cause analyses, total recoverable zinc was not found to cause an excursion of the SWQS. The Department's conclusions and results are listed below. Refer to Table A at the back of the Fact Sheet for a summary of the effluent limitation analysis for this parameter.

- Since the discharge of total recoverable zinc in the permittee's effluent was not found to cause an excursion of the SWQS, a WQBEL is not proposed in the draft permit for this parameter at this time. However, monitoring and reporting on a **semi-annual** basis has been included in this permit action based on N.J.A.C. 7:14A-13.5(k)3 and the need to re-evaluate the necessity for WQBELs upon renewal of the permit (based on the recommendations of section 3.1 of the EPA TSD).

Consistent with the intent of 40 CFR 122.45(c) and N.J.A.C. 7:14A-13.14(b), monitoring data for toxic metals (excluding Hexavalent Chromium) shall be expressed as total recoverable. As authorized by N.J.A.C. 7:14A-13.14(b)3, the monitoring data for Hexavalent Chromium shall be expressed as dissolved.

The DRBC is currently developing WLAs for 1,2 dichloroethane, tetrachloroethylene, and trichloroethylene. Monitoring only on an annual basis for these three volatile organic compounds, 1,2 dichloroethane, tetrachloroethylene, and trichloroethylene is included in the permit. This frequency is consistent with that for the other volatile organic compounds.

D. Basis and Derivation for Effluent Limitations and Monitoring Requirements – Specific for DSN 002A:

DSN 002A is an emergency discharge point that is only used during an extreme storm event where the potential exists to overflow the refinery west stormwater recycle basins. It has only been used eleven months during the time period from January 2009 through April 2014. The average flow during these eleven months was 3.9 MGD while the maximum discharge was 14.1 MGD. The discharge from DSN002A consists primarily of stormwater which is subjected to settling before discharge to the Delaware River. In the event that extreme weather conditions result in process wastewater being mixed with the stormwater in the stormwater basins and there is a discharge to surface water from DSN002A, the permittee shall notify Enforcement in accordance with the requirements of N.J.A.C. 7:14A-6.10.

1. Flow:

Monitoring conditions are applied pursuant to N.J.A.C. 7:14A-13.13. The monitoring frequency is **once per discharge** and the sample type shall be **calculated**.

2. pH:

The effluent limitations are retained from the existing permit and are consistent with the Effluent Quality Requirements of the DRBC Water Quality Regulations, Section 4.30.5. They are a minimum of 6.0 Standard Units (SU) and a maximum of 9.0 SU.

The existing monitoring frequency of **once per discharge** is being carried forward from the existing permit. The sample type shall be **grab**.

3. Chemical Oxygen Demand (COD):

The monitoring and reporting requirement for monthly average and daily maximum concentration is retained from the existing permit.

The existing monitoring frequency of **once per discharge** is being carried forward from the existing permit. The sample type shall be **grab**.

4. Total Suspended Solids (TSS):

The daily maximum concentration limitation of 50 mg/L is retained from the existing permit in accordance with N.J.A.C. 7:14A-13.19. The monitoring and reporting requirement for monthly average concentration is also retained from the existing permit.

The existing monitoring frequency of **once per discharge** is being carried forward from the existing permit. The sample type shall be **grab**.

5. Oil and Grease:

The daily maximum concentration limitation of 15 mg/L is retained from the existing permit in accordance with N.J.A.C. 7:14A-13.19 and is consistent with N.J.A.C. 7:14A-12.8(c). The monitoring and reporting requirement for monthly average concentration is also retained from the existing permit.

The existing monitoring frequency of **once per discharge** is being carried forward from the existing permit. The sample type shall be **grab**.

F. Use of Sufficiently Sensitive Test Methods for Reporting:

When more than one test procedure is approved for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 CFR 136, 122.21 (e)(3), and 122.44(i)(1)(iv).

An EPA-approved method is sufficiently sensitive where:

- A. The method minimum level is at or below the level of the applicable water quality criterion or permit limitation for the measured pollutant or pollutant parameter; or
- B. The method minimum level is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or
- C. The method has the lowest minimum level of the EPA-approved analytical methods.

When there is no analytical method that has been approved at 40 CFR Part 136, required at 40 CFR Chapter I, Subchapter N or O, and is not otherwise required by the Department, the permittee may use any suitable method upon approval by the Department.

If there are any questions regarding sufficiently sensitive test methods, contact the Office of Quality Assurance at (609) 292-3950.

G. Influent Monitoring Requirements:

In order to calculate percent removals, influent monitoring is required for BOD₅ in accordance with N.J.A.C. 7:14A-6.5(b) and 11.2(a) 2.

H. Reporting Requirements:

All data requested to be submitted by this permit shall be reported on the Discharge Monitoring Reports (DMRs), Waste Characterization Reports (WCR), and Residual Transfer Reports (RTR) as appropriate and submitted to the Department as required by N.J.A.C. 7:14A-6.8(a).

I. General conditions:

In accordance with N.J.A.C. 7:14A-2.3 and 6.1(b), specific rules from the New Jersey Administrative Code have been incorporated either expressly or by reference in Part I and Part II.

J. Operator Classification Number:

The operator classification requirement is no longer included in the permit. To obtain or determine the appropriate licensed operator classification for the treatment works specified, the permittee shall contact the Bureau of Licensing and Pesticide Operations at (609) 984-6507.

K. Flow Related Conditions:

This facility is located in the area covered by the Lower Delaware Water Quality Management Plan.

L. Residuals/Sludge Conditions:

Residuals and sludge from the industrial treatment works are typically recycled to plant operational systems for product recovery. However, occasionally sludge from the industrial treatment works is hauled off-site for use or disposal. Analysis of the industrial sludge for the parameters found on Table III-B-1 of Part III is only required when sludge is hauled off-site for use or disposal during the monitoring period. Analyses for these constituents are required for off-site use or disposal because they were detected in previous sludge quality monitoring data submitted to the Department or are otherwise expected to be present in the sludge in accordance with the Sludge Quality Assurance Regulations (N.J.A.C. 7:14C). The frequency of monitoring is dependent on the amount of sludge removed for use or disposal. Since the amount of sludge removed off-site for use or disposal is less than 290 dry metric tons per year the frequency of monitoring is annually.

All treatment works with a discharge regulated under N.J.A.C. 7:14A must have permits that implement applicable technical standards for residuals management. Generally, the permit issued to the treatment works generating the residual will include applicable residual quality monitoring as well as other general conditions required by N.J.A.C. 7:14A-6. In addition, the permit may include conditions related to any aspect of residual management developed on a case-by-case basis where the Department determines that such conditions are necessary to protect public health and the environment.

The permit may also include conditions establishing requirements for treatment works that send residual to other facilities for final use or disposal. Thus, **ALL** residual preparers (that is, generators as well as persons who manage the residual) are required to submit basic information concerning their residual use and disposal practices. This basic information is submitted by compliance with the Sludge Quality Assurance Regulations (N.J.A.C. 7:14C).

The documents listed below have been used to establish the residual conditions of the Draft Permit:

- a. United States Environmental Protection Agency "Standards for the use or disposal of sewage sludge" (40 CFR Part 503),
- b. "New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A),
- c. Technical Manual for Residuals Management, May 1998,

- d. USEPA Part 503 Implementation Guidance, EPA 833-R-95-001, October 1995. This document is a compilation of federal requirements, management practices and EPA recommended permit conditions for sewage sludge use and management practices,
- e. USEPA A Plain English Guide to the EPA Part 503 Biosolids Rule, EPA/832/R-93/003, September 1994,
- f. New Jersey "Statewide Sludge Management Plan", January 2006 and
- g. New Jersey "Sludge Quality Assurance Regulations" (SQAR), N.J.A.C. 7:14C.

M. Compliance Schedule:

Since the permittee's effluent data indicates that they may be unable to consistently comply with the final effluent limitation for E. Coli, a schedule of compliance is included in the permit, including interim deadlines for progress or reports of progress towards compliance with the conditions of this permit, in accordance with N.J.A.C. 7:14A-6.4(a). The compliance schedule for E. Coli is established at 12 months from the effective date of the permit (EDP) to allow the permittee sufficient time to achieve compliance with the newly established effluent limitation. This schedule is provided in consideration of the time it would require for the permittee to undertake steps needed to modify or install treatment facilities, operations or other required measures.

1. Compliance Schedule for E. Coli:

- a. During the Initial Phase, from the effective date of the permit (EDP) up to and including EDP + 12 months, the permittee shall only monitor and report for the above referenced parameter.
- b. During the Interim and Final Phases, beginning on EDP + 13 months, the permittee shall meet the final effluent limitation for the above referenced parameter.

N. Biocides or Other Cooling Water Additives:

The Department has approved the permittee's request to use the corrosion inhibitors, biocides, or other cooling water additives in its non-contact cooling water as shown below:

BL-122	CL-2150	CTI-9807	BL-1302	CL-4892
BL-1260	CL-4125	CTI-9856	BL-8100	CN-135
BL-1283	CL-5852	P-813E	BL-8104	CT-30
BL-1559	CT-904	P-824L	CL-240	CT-38
BL-4357	CTI-9802	P-899L	CL-2212	DG-301

If the permittee decides to begin using any additional additives in the future that contain active ingredients equivalent to the above listed additives, the permittee shall only be required to notify the Bureau of Surface Water Permitting prior to its use. This notification shall consist of all relevant information, including Material Safety Data Sheets and applicable aquatic toxicity data. However, if the permittee decides to begin using any additional additives that are chemically different from the above listed, the permittee shall notify this Bureau at least 180 days prior to use so that the permit may be reopened to incorporate any additional limitations and/or monitoring requirements deemed necessary.

O. Delaware River Basin PCB Pollutant Minimization Plan:

On December 15, 2003 the U.S. EPA Regions 2 and 3 adopted a Total Maximum Daily Load for Polychlorinated Biphenyls (PCBs) for Zones 2, 3, 4 and 5 of the tidal Delaware River. This TMDL requires that the facilities identified as discharging PCBs to the Delaware River prepare and implement PCB pollutant reduction plans (hereafter referred to as Pollutant Minimization Plans (PMPs)).

Both dry and wet weather sampling are required for this facility with a frequency of 2 dry weather and 2 wet weather samples per year.

This permit renewal also requires that the permittee continue to implement the approved PMP and submit a PMP annual report to the DRBC and the Department each subsequent year.

Refer to Part IV Section D of this permit for further details regarding the PMP requirements applicable to this facility.

P. Reclaimed Water for Beneficial Reuse (RWBR):

This draft permit contains conditions allowing the Paulsboro Refinery to beneficially reuse treated effluent identified as RWBR provided the effluent is in compliance with the criteria specified for the particular use. There are two main types of RWBR uses, Public Access Use and Restricted Access Use. Conditions applicable to both types of RWBR are included herein. However, currently approved types of RWBR are included in Appendix A of this permit. As specified in Part IV, the permittee must obtain approval from the Department for each additional RWBR application prior to implementation. Approval shall be granted via a minor modification to the permit for any newly requested applications and included in Appendix A of this permit.

1. Effluent Limitations and Monitoring Requirements for Distribution of Reclaimed Water for Beneficial Reuse for Public Access

When the permittee distributes RWBR to an approved reuse location, the surface water discharge effluent limitations contained in Part III of this permit and requirements for Public Access reuse identified in Part IV of this permit shall be met. In addition, the following system, operational and monitoring conditions shall be applicable.

Reclaimed water shall not exceed 5.0 mg/L of Total Suspended Solids (TSS) at a point before application of disinfection. The sample type shall be grab. The facility shall provide continuous on-line monitoring for turbidity before application of disinfection. These requirements are consistent with the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse" and EPA document entitled, "Municipal Wastewater Reuse, Selected Readings on Water Reuse", EPA # 430/09-91-022, September 1991 and the EPA Manual, "Guidelines for Water Reuse", EPA document # 625R-92/004, September 1992.

Where chlorine is utilized for disinfection, chlorine-produced oxidants (CPO) of at least 1.0 mg/L shall be maintained for a minimum acceptable contact time of 15 minutes at peak hourly flow. The treatment facility shall provide continuous on-line monitoring for CPO at the reuse compliance monitoring point, which shall be prior to distribution to an approved reuse location. This requirement is consistent with the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse" and EPA document entitled, "Municipal Wastewater Reuse, Selected Readings on Water Reuse" EPA # 430/09-91-022, September 1991 and the EPA Manual, "Guidelines for Water Reuse", EPA document # 625R-92/004, September 1992.

Fecal coliform concentrations shall not exceed 14 fecal coliforms per 100 mL at any given time (as an instantaneous maximum level). Fecal coliform concentrations shall also meet a weekly (7 day) median value of 2.2 fecal coliforms per 100 mL. This is consistent with a report entitled "Regulations Governing Agricultural Use of Municipal Wastewater and Sludge", National Academy Press, Washington, D.C. 1996, Department's "Technical Manual for Reclaimed Water for Beneficial Reuse" and the EPA Manual, "Guidelines for Water Reuse", EPA document # 625R-92/004, September 1992.

RWBR limitations shall not exceed a total nitrogen ($\text{NO}_3 + \text{NH}_3$) concentration of 10.0 mg/L. This is the Ground Water Quality Standard (as per N.J.A.C. 7:9-6) and consistent with the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse." This requirement only applies when RWBR is land applied, however, this requirement does not apply to spray irrigation within a fenced perimeter or otherwise restricted area. The permittee may demonstrate that a concentration greater than 10 mg/l is protective of the environment by submitting and receiving approval of the information stated in the Engineering Report section of the "Technical Manual for Reclaimed Water for Beneficial Reuse."

2. Effluent Limitations and Monitoring Requirements for Distribution of Reclaimed Water for Beneficial Reuse for **Restricted Access – Land Application and Non Edible Crops**

When the permittee distributes RWBR to an approved reuse location, the surface water discharge effluent limitations contained in Part III of this permit and requirements for Non Edible Crops reuse identified in Part IV of this permit shall be met. In addition, the following system, operational and monitoring conditions shall be applicable.

Where chlorine is utilized for disinfection, chlorine-produced oxidants (CPO) of at least 1.0 mg/ L shall be maintained for a minimum acceptable contact time of 15 minutes at peak hourly flow. The treatment facility shall provide continuous on-line monitoring for CPO at the reuse compliance monitoring point, which shall be prior to distribution to an approved reuse location. This requirement is consistent with the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse" and EPA document entitled, "Municipal Wastewater Reuse, Selected Readings on Water Reuse" EPA # 430/09-91-022, September 1991 and the EPA Manual, "Guidelines for Water Reuse", EPA document # 625R-92/004, September 1992.

The effluent shall comply with the permit limitations for E. Coli as specified in the Effluent Limitations Table in Part III of the permit. This is consistent with a report entitled "Regulations Governing Agricultural Use of Municipal Wastewater and Sludge", National Academy Press, Washington, D.C. 1996, Department's "Technical Manual for Reclaimed Water for Beneficial Reuse" and the EPA Manual, "Guidelines for Water Reuse", EPA document # 625R-92/004, September 1992.

RWBR limitations shall not exceed a total nitrogen ($\text{NO}_3 + \text{NH}_3$) concentration of 10.0 mg/L. This is the Ground Water Quality Standard (as per N.J.A.C. 7:9-6) and consistent with the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse." This requirement only applies when RWBR is land applied, however, this requirement does not apply to spray irrigation within a fenced perimeter or otherwise restricted area. The permittee may demonstrate that a concentration greater than 10 mg/l is protective of the environment by submitting and receiving approval of the information stated in the Engineering Report section of the "Technical Manual for Reclaimed Water for Beneficial Reuse."

3. Effluent Limitations and Monitoring Requirements for Distribution of Reclaimed Water for Beneficial Reuse for **Restricted Access – Construction and Maintenance Operations and Restricted Access – Industrial Systems**

When the permittee distributes RWBR to an approved reuse location, the surface water discharge effluent limitations contained in Part III of this permit and requirements for Construction and Maintenance Operation Systems and/or Industrial Systems reuse identified in Part IV of this permit shall be met.

Other Applicable Conditions for RWBR:

The following conditions are consistent with the requirements of the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse" and the EPA document entitled, "Municipal Wastewater Reuse, Selected Readings on Water Reuse" EPA # 430/09-91-022, September 1991 and the EPA Manual, "Guidelines for Water Reuse", EPA document # 625R-92/004, September 1992.

Only reclaimed water meeting high level treatment and the conditions detailed in the approved Operations Protocol shall be diverted for beneficial reuse. Diversion of acceptable quality reclaimed water to the reuse location shall occur only during periods of operator presence, unless other provisions for increased facility reliability are detailed in the Operations Protocol. The Operations Protocol must be reviewed and updated as required. Changes to the Operations Protocol must be submitted to the Department and approved by the Department prior to implementation. Reclaimed water produced at the treatment facility that fails to meet the criteria established in the Operations Protocol shall not be diverted for beneficial reuse and must instead, be discharged in compliance with the NJPDES/DSW permitted outfall.

The application of reclaimed water shall not produce surface runoff or ponding of the reclaimed water. Land application sites shall not be frozen or saturated when applying RWBR. All setback distances shall be consistent with the requirements of the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse".

The permittee must post advisory signs designating the nature of the project in the area where beneficial reuse is practiced. Examples of methods for notification are identified in the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse".

No cross-connections to potable water systems shall be allowed. All reuse system valves and outlets must be appropriately tagged or labeled to warn the public and employees that the water is not intended for drinking. All piping, pipelines, valves, and outlets must be color coded, or otherwise marked, to differentiate reclaimed water from domestic or other water, as detailed in the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse".

The permittee is required to submit a Beneficial Reuse Annual Report on February 1 of each year. The annual report shall compile the total flow of reuse water distributed to each approved reuse site for each approved type of reuse for the previous calendar year. Specific requirements for the annual report are identified in the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse". In addition a daily log noting the volume of water supplied, the name of the user, date of pick-up, the location and type of reuse (e.g. sewer jetting, landscape irrigation, etc...). and where it is being distributed shall be maintained on-site.

The permittee is required to submit a copy of all Reuse Supplier and User Agreements for existing reuses with its permit application package. Additional Reuse Supplier and User Agreements shall be submitted for each additional user prior to start-up of that use. A Reuse Supplier and User Agreement is a binding agreement between the permittee that supplies the RWBR and the entity that beneficially reuses this water. This agreement is required to ensure that all parties involved work to ensure that construction, operation, maintenance and monitoring of the RWBR system is in compliance with the Technical Manual, all applicable rules and regulations, this permit and the permittee's NJPDES discharge permit. A The requirement for submittal of this document is consistent with N.J.A.C. 7:14A-2.11(a). Please note that a Reuse Supplier and User Agreement is not required if the supplier of the RWBR and the user are the same entity.

The permittee is required to submit and receive approval of an Engineering Report in support of RWBR approval requests for new or expanded RWBR projects as detailed in the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse."

7 Section 316(b) of the Clean Water Act and Section 316(b) Regulations

A. Regulatory Background

Section 316(b) “require[s] that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.” The majority of environmental impacts associated with intake structures are caused by water withdrawals that ultimately result in aquatic organism losses. In that regard, cooling water intakes can have two types of effects, namely impingement and entrainment.

Impingement takes place when organisms are trapped against intake screens by the force of the water passing through the Cooling Water Intake Structure (CWIS). Impingement can result in starvation and exhaustion (organisms are trapped against an intake screen or other barrier at the entrance to the CWIS), asphyxiation (organisms are pressed against an intake screen or other barrier at the entrance to the CWIS by velocity forces that prevent proper gill movement, or organisms are removed from the water for prolonged periods of time), and descaling (fish lose scales when removed from an intake screen by a wash system) as well as other physical harm.

Entrainment occurs when organisms are drawn through the CWIS into the cooling system. Organisms that become entrained are normally relatively small benthic, planktonic, and nektonic organisms, including early life stages of fish and shellfish. Many of these small organisms serve as prey for larger organisms that are found higher on the food chain. As entrained organisms pass through a plant's cooling system they are subject to mechanical, thermal, and/or toxic stress. Sources of such stress include physical impacts in the pumps and condenser tubing, pressure changes caused by diversion of the cooling water into the plant or by the hydraulic effects of the condensers, shear stress, and chemical toxemia induced by antifouling agents such as chlorine.

EPA interprets the “best technology available” (BTA) standard to require use of the best technology available commercially at an economically practicable cost. CWIS technology is not BTA if its costs are “wholly disproportionate” to its environmental benefits. *In re Pub. Serv. Co. of New Hampshire*, 1 E.A.D. 332, 340 (EPA Final Decision, June 10, 1977). EPA issued final regulations under Section 316(b) for Phase II existing facilities which became effective September 7, 2004. The 2004 final Phase II regulation (2004 Phase II rule) established impingement requirements which required the number of organisms pinned against parts of the intake structure to be reduced by 80 to 95 percent from uncontrolled levels. Entrainment requirements called for the number of aquatic organisms drawn into the cooling system to be reduced by 60 to 90 percent from uncontrolled levels. The 2004 Phase II rule provided several compliance alternatives, such as using existing technologies, selecting additional fish protection technologies (such as screens with fish return systems), and using restoration measures. In its 2004 Phase II rule EPA expressly declined to mandate closed-cycle cooling systems in part due to the high costs of retrofitting existing facilities with cooling towers.

These rules were challenged by environmental plaintiffs and were overturned in part by the Second Circuit in *Riverkeeper, Inc. v. EPA*, 475 F.3d 83 (2d Cir. 2007). The Second Circuit held that EPA could not consider costs to establish BTA and directed EPA to reconsider key provisions of the rules, including EPA’s determination of BTA, the performance standard ranges, the cost-cost and cost-benefit compliance alternatives, the Technology Installation and Operation Plan (TIOP) provision, and the restoration provisions. Following the Second Circuit’s ruling, EPA suspended the Phase II Section 316(b) regulations. *Suspension of Regulations for Cooling Water Intake Structures at Phase II Existing Facilities*, 72 Fed. Reg. 37,107 (July 9, 2007). Pursuant to this suspension, EPA directed states and permitting authorities to issue 316(b) permits on a case-by-case basis in accordance with their Best Professional Judgment (BPJ) pursuant to 40 CFR 125.90(b) and 40 CFR 401.14.

The Second Circuit decision was appealed to the Supreme Court, which agreed to consider “whether 316(b) of the Clean Water Act, 33 United States Code (U.S.C.) 1326(b), authorizes the EPA to compare costs with benefits when determining the ‘best technology available for minimizing adverse environmental impacts’ at cooling water intake structures?” *Entergy Corp. v. EPA*, 552 U.S. 1309 (2008).

In 2009 the Supreme Court reversed and remanded the case, holding that EPA may use cost-benefit analysis in determining BTA. *Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208 (2009) (finding the “wholly disproportionate” test consistent with EPA’s discretion under Section 316(b) to “avoid extreme disparities between costs and benefits” when determining BTA). On remand the Second Circuit granted EPA’s request to return the rules to the Agency for further consideration. *Riverkeeper, Inc. v. EPA*, No. 04-6692 (2d. Cir. Sept. 29, 2009) (order remanding to EPA).

In November 2010, EPA entered into a consent decree with the Riverkeeper, Inc. and other environmental plaintiffs to draft and issue new regulations over the next two years. EPA agreed to propose new Section 316(b) rules by March 28, 2011, with the goal of issuing final rules on July 27, 2012. EPA consequently published draft regulations in the Federal Register entitled *Cooling Water Intake Structures at Existing Facilities and Phase I Facilities*, 76 Fed. Reg. 22,174 (April 20, 2011). In the draft rules, EPA proposed that Ristroph screens and equivalent modified traveling screens may be BTA for Phase II facilities and relied upon this finding as the basis for EPA’s compliance cost estimates in the rule proposal. *Id.* at 22,203, 22,214. Commenting on the proposed rules, the Department wrote that it “wholeheartedly agrees that the selected best technology available determination of modified Ristroph traveling screens with a fish return is an effective and available technology.” NJDEP Comment 17, Docket No. EPA-HW-OW-2008-0667-2153 (August 17, 2011).

EPA sought and was granted four extensions by the environmental plaintiffs to complete revisions in its final rules. The extensions have allowed EPA to respond to the comments received on the proposal, which were numerous and complex in nature, and gave the Agency additional time to collect and review new data. On February 10, 2014 EPA announced a revised deadline of April 17, 2014 for release of the final rules.

On May 19, 2014 EPA released an unofficial pre-publication version of the final regulations to establish requirements under Section 316(b) of the Clean Water Act for all existing power generating facilities and existing manufacturing and industrial facilities that have surface water intakes. The final regulations became official when published in the Federal Register on August 15, 2014 (2014 Rule). See 79 Fed. Reg. 48300. Existing facilities that withdraw more than 2 MGD of water from waters of the United States and use at least 25 percent of that water exclusively for cooling purposes must comply with the new 316(b) regulations. The regulations establish national performance standards that represent a baseline level of protection required of all affected facilities, and the regulations allow NPDES administrators to require additional safeguards for aquatic life based on site-specific considerations.

There are three components to the final 2014 rule:

- (1) Existing facilities that withdraw at least 25 percent of their water from an adjacent waterbody exclusively for cooling purposes and have a design intake flow of greater than 2 MGD are required to reduce fish impingement. To ensure flexibility, the owner or operator of the facility will be able to choose one of seven options for meeting BTA requirements for reducing impingement.
- (2) Facilities that withdraw very large amounts of water – at least 125 MGD – are required to conduct studies to help the permitting authority determine what site-specific entrainment mortality controls, if any, will be required. This process will include public input.
- (3) New units at an existing facility that are built to increase the generating capacity of the facility are required to reduce the intake flow to a level similar to a closed cycle, recirculating system. This can be done by incorporating a closed-cycle system into the design of the new unit, or by making other design changes equivalent to the reductions associated with closed-cycle cooling.

These regulations became effective on October 14, 2014.

As part of the issuance of the final regulations, EPA distributed guidance regarding the implementation of federal regulations with respect to the timing of the regulations and applicable requirements. Specifically, EPA stated that

if the Director (e.g. state permitting authority) began a permit renewal prior to October 14, 2014 (before the effective date of the final rule), the Director may issue a permit based on the information already supplied by the applicant without the need to supplement to meet additional reporting and study requirements of the new regulations, as long as the permit is issued before July 14, 2018. However, the NPDES permitting authority has discretion to require additional information from the applicant, where necessary, for determining appropriate permit conditions.

B. Endangered Species Act Consultation

The Clean Water Act does not address endangered species, nor does this permit authorize take, as defined by the Endangered Species Act (ESA), 16 U.S.C. 1532(19). The U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) (collectively the Services) have determined that any impingement (including entrapment) or entrainment of Federally-listed species constitutes take. Such take may be authorized pursuant to the conditions of a permit issued under 16 U.S.C. 1539(a) or where consistent with an Incidental Take Statement contained in a Biological Opinion pursuant to 16 U.S.C. 1536(o). See 40 CFR 125.98(j).

EPA included a provision at 40 CFR 125.95(f) that requires a facility in its permit application to identify all Federally-listed threatened and endangered species and designated critical habitat that are or may be present in the action area. Further, the rule requires that the NPDES permitting authority transmit all permit applications to the Services to allow a 60 day review, which takes place prior to the public notice of the State's draft permit. The Services are expected to respond within 60 days and provide any corrections to the list of Federally-listed threatened and endangered species and critical habitat included in the permit application, and any measures that the Services recommend (including monitoring and reporting) for the protection of listed species. In addition, the State must copy the Services on the issuance of the draft permit, giving the Services an opportunity to review the draft permit and provide additional input or suggested control measures to address effects to listed species or critical habitat.

Among the recommendations that may be made by the Services to the facility and the Director are measures to minimize incidental take. EPA expects that any measures the Services recommend to minimize incidental take will be consistent with the Endangered Species Act (ESA) regulations and guidances, which state at 50 CFR 402.14(i)(2), "Reasonable and prudent measures, along with the terms and conditions that implement them, cannot alter the basic design, location, scope, duration, or timing of the action and may involve only minor changes." Further, EPA does not expect that installation of closed-cycle cooling would be specified as a measure solely for the purposes of minimizing incidental take.

In preparing this draft permit, the Department consulted with the USFWS as well as with the National Oceanographic and Atmospheric Administration's (NOAA) NMFS regarding the take of endangered species. The Department sent copies of the application for permit renewal to Chris Vaccaro, Fisheries Biologist for NMFS, on April 2, 2015, and to Eric Schrading of the USFWS on April 2, 2015.

On May 1, 2015 the Department received comments from Carlo Popolizio of the USFWS New Jersey Field Office. The USFWS responded with a finding of no objections to the renewal of this permit. No further recommendations were provided by USFWS.

On June 22, 2015 the Department received comments from Mark Murray-Brown of NOAA's NMFS. In these comments NMFS provided information on the presence of the endangered shortnose sturgeon and threatened Atlantic sturgeon in the Delaware River. NMFS confirmed that there is currently no critical habitat under its jurisdiction in the action area; therefore, none will be affected by the Paulsboro facility at this time. NMFS also recommended WET testing using rainbow trout (*Onchorhynchus mykiss*) and brook trout (*Salvelinus fontinalis*). The Department is not incorporating WET testing using these two freshwater species due to the brackish salinity of the receiving stream, however the Department will consider modifying the permit to incorporate WET testing for appropriate species at a later date.

Both the USFWS and NOAA's NMFS received copies of the predraft permit. These agencies will also be copied on the draft and final versions of this renewal permit.

C. Required Studies under Section 316(b)

As described previously, the permittee uses intake water from the Delaware River as a make-up water for refinery boilers, cooling towers, miscellaneous refinery processes and the fire water system at a maximum rate of 400 million gallons per month or 13.3 MGD. The five year average influent flow was 7.137 MGD. Applicability under the Section 316(b) regulations at 40 CFR 125.91 is as follows:

- The facility is a point source;
- The facility uses or proposes to use one or more cooling water intake structures with a cumulative design intake flow (DIF) of greater than 2 million gallons per day (mgd) to withdraw water from waters of the United States; and
- Twenty-five percent or more of the water the facility withdraws on an actual intake flow basis is used exclusively for cooling purposes.

As per the Section 316(b) regulations at Subpart J – Requirements Applicable to Cooling Water Intake Structures for Existing Facilities, the facility is required to do a variety of studies. Given that manufacturing facilities such as Paulsboro Refining are newly covered under Section 316(b), the Department acknowledges that there is no existing impingement or entrainment data available to the Department's knowledge. Permit application requirements as included at 40 CFR 122.21(r)(2) through 40 CFR 122.21(r)(8) as applicable to Paulsboro Refining can be summarized as follows:

Regulatory Section	Study Name	Study Contents
(r)(2)	Source water physical data	Waterbody description, hydrology, chemistry, area of influence of the intake structure
(r)(3)	Cooling water intake structure data	Configuration of intake, flows, water balance diagram, typical operations
(r)(4)	Source water baseline biological characterization data	Species present, susceptibility to impingement and entrainment, spawning periods, seasonal patterns; Threatened and Endangered species documentation
(r)(5)	Cooling water system data	Configuration of cooling water system, water reuse
(r)(6)	Intended method of compliance with impingement mortality standard	Select impingement mortality compliance path, option-specific information (e.g., monitoring plan for BTA, documentation of velocity); Performance Optimization Study
(r)(7)	Existing entrainment performance studies	Previous studies on technology efficacy, studies from other facilities, other entrainment studies
(r)(8)	Operational status	Age, utilization, past upgrades

Since the actual intake flow is less than 125 MGD, the facility is not required to submit studies regarding Entrainment Characterization Study (40 CFR Section 122.21(r)(9)); Comprehensive Technical Feasibility and Cost Evaluation Study (40 CFR Section 122.21(r)(10)); Benefits Valuation Study (40 CFR Section 122.21(r)(11)); Non-water Quality Environmental and Other Impacts Study (40 CFR Section 122.21(r)(12)); and Peer Review (40 CFR Section 122.21(r)(13)).

In addition, the permittee is required to choose an intended method of compliance with the impingement mortality standard. A summary of some of the alternatives and associated requirements as per 40 CFR 125.94(c) is as follows:

Compliance Alternative	Technology Basis
Pre-approved technology; no biological compliance monitoring	<ul style="list-style-type: none"> - Closed-cycle - Design intake velocity <0.5 fps - Existing offshore velocity cap
Streamlined compliance alternative	<ul style="list-style-type: none"> - Actual intake velocity <0.5 fps - Modified traveling screens - System of Technologies (e.g. intake location, behavioral deterrents)
12 month performance standard of no more than 24% mortality	<ul style="list-style-type: none"> - As demonstrated through biological monitoring

All information shall be submitted with the next renewal application which is due at the Effective Date of Permit (EDP) + 4 1/2 years. These studies are included in Part IV.

D. Section 316(b) Best Technology Available Determination

In consideration of the recent regulatory changes as well as the lack of impingement and entrainment information available at this time, the Department is hereby designating compliance with 40 CFR 122.21(r)(6) and the installation of control measures as specified at 40 CFR 125.94(c) as interim BTA for impingement and entrainment mortality in accordance with BPJ. This interim BTA determination is in effect until such time as a final impingement and entrainment determination is made based on submission and review of the required study components.

8 Variances to Permit Conditions:

To date, the Department has not received a variance request from the permittee.

Procedures for modifying a WQBEL are found in the New Jersey SWQS, N.J.A.C. 7:9B-1.8 and 1.9. If a WQBEL has been proposed in this permit action, the permittee may request a modification of that limitation in accordance with N.J.A.C. 7:14A-11.7(a). This request must be made prior to the close of the public comment period. The information that must be submitted to support the request may be obtained from the Bureau of Environmental Analysis, Restoration and Standards at (609) 633-1441.

9 Description of Procedures for Reaching a Final Decision on the Draft Action:

Please refer to the procedures described in the public notice that is part of the draft permit. The public notice for this permit action is published in the *Gloucester County Times* and in the DEP Bulletin.

10 Contact Information

If you have any questions regarding this permit action, please contact Robert Hall, Bureau of Surface Water Permitting at (609) 292-4860.

11 Calculation Equations:

A. Steady State Mass Balance Equation: $C_d = C_i = (Q_{up} \times C_{up} + Q_w \times WLA) / (Q_{up} + Q_w)$

where, C_d = downstream concentration
 C_i = instream surface water criteria (from N.J.A.C. 7:9B)
 C_{up} = upstream concentration
 Q_{up} = upstream design low flow value, cfs
 Q_w = wastewater flow, cfs
 WLA = wasteload allocation

B. Wasteload Allocation: $WLA = C_i \times Df - C_{up}(Df - 1)$

where, WLA = wasteload allocation
 C_i = instream surface water criteria (from N.J.A.C. 7:9B)
 C_{up} = upstream concentration
 Df = dilution factor

C. Long Term Average: $LTA = (WLA) \times [WLA \text{ multiplier (LTA)}]$

where, LTA = long term average
 WLA = wasteload allocation
 $WLA \text{ multiplier (LTA)}$ = wasteload allocation multiplier for long term average, the 99th percentile multiplier, (see Table 5-1 in TSD, page 102)

D. Maximum Daily Limitation: $MDL = (LTA) \times [LTA \text{ multiplier (MDL)}]$

where, MDL = maximum daily limitation
 LTA = long term average
 $LTA \text{ multiplier (MDL)}$ = long term average multiplier for the maximum daily limitation, the 99th percentile multiplier, (see Table 5-2 in TSD, page 103)

E. Average Monthly Limitation: $AML = (LTA) \times [LTA \text{ multiplier (AML)}]$

where, AML = average monthly limitation
 LTA = long term average
 $LTA \text{ multiplier (AML)}$ = long term average multiplier for the average monthly limitation, the 99th percentile multiplier, (see Table 5-2 in TSD, page 103)

Permit Summary Table

Unless otherwise noted, all effluent limitations are expressed as maximums. Dashes (--) indicate there is no effluent data, no limitations, or no monitoring for this parameter depending on the column in which it appears.

DSN 001A: Wastewater Treatment Plant Effluent

PARAMETER	UNITS	AVERAGING PERIOD	WASTEWATER DATA 1/2009 – 4/2014	EXISTING LIMITS	INITIAL LIMITS	FINAL LIMITS
Flow, Intake	MGD	Monthly Avg. Daily Max.	6.56 13.78	MR MR	MR MR	MR MR
Flow, In Conduit or Thru Treatment Plant	MGD	Monthly Avg. Daily Max.	9.19 16.32	MR MR	MR MR	MR MR
Flow Precipitation	MGD	Monthly Avg. Daily Max.	0.52 72.99	MR MR	MR MR	MR MR
Effluent Temperature	°C	Monthly Avg. Daily Max.	25.21 36.9	MR 40	MR 40	MR 40
Effluent pH	S.U.	Instant Min. Instant Max.	6.4 8.4	6.0 9.0	6.0 9.0	6.0 9.0
E. Coli (geometric mean)	# per 100 ml	Monthly Avg. Daily Max.	-- --	-- --	MR MR	126 MR
Fecal Coliform (geometric mean)	# per 100 ml	Monthly Avg. Daily Max. # Det. / # N.D.	4.91 44.74 54/9	200 400	200 400	-- --
Color	Platinum- Cobalt Units	Monthly Avg. Daily Max.	29 40	MR 100	MR 100	MR 100
Total Phosphorus	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	94.57 334.3 19/2	MR MR	MR MR	MR MR
Total Phosphorus	mg/L	Monthly Avg. Daily Max. # Det. / # N.D.	2.75 10.3 19/2	MR MR	MR MR	MR MR
Chlorine Produced Oxidants	mg/L	Monthly Avg. Daily Max.	0.34 1.6	MR MR	MR MR	MR MR
5 Day Biochemical Oxygen Demand (BOD ₅) Influent (1)	mg/L	Monthly Avg. Daily Max.	244.69 1007	MR MR	MR MR	MR MR
5 Day Biochemical Oxygen Demand (BOD ₅) Intake	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	30.82 128 21/43	MR MR	MR MR	MR MR
5 Day Biochemical Oxygen Demand (BOD ₅) Intake	mg/L	Monthly Avg. Daily Max. # Det. / # N.D.	1.09 6.1 21/43	MR MR	MR MR	MR MR
5 Day Biochemical Oxygen Demand (BOD ₅) Effluent Gross Value	kg/d	Monthly Avg. Daily Max.	259.89 4539	MR MR	MR MR	MR MR
5 Day Biochemical Oxygen Demand (BOD ₅) Effluent Gross Value	mg/L	Monthly Avg. Daily Max.	7.38 120	MR MR	MR MR	MR MR
5 Day Biochemical Oxygen Demand (BOD ₅) Net	kg/d	Monthly Avg. Daily Max.	237.81 4412	MR MR	MR MR	MR MR

PARAMETER	UNITS	AVERAGING PERIOD	WASTEWATER DATA 1/2009 – 4/2014	EXISTING LIMITS	INITIAL LIMITS	FINAL LIMITS
5 Day Biochemical Oxygen Demand (BOD ₅) Net	mg/L	Monthly Avg. Daily Max.	6.69 116	MR MR	MR MR	MR MR
5 Day Biochemical Oxygen Demand (BOD ₅) Calculated Adjusted value (Ballast Water)	kg/d	Monthly Avg. Daily Max.	No ballast water discharged	MR MR	MR MR	MR MR
5 Day Biochemical Oxygen Demand (BOD ₅) Precipitation	kg/d	Monthly Avg. Daily Max.	52.20 428	MR MR	MR MR	MR MR
5 Day Biochemical Oxygen Demand (BOD ₅) Effluent Adjusted Value	kg/d	Monthly Avg. Daily Max.	185.51 4333	1114 2611	1114 1851	1114 1851
BOD ₅ Minimum Percent Removal	%	Monthly Avg. Min.	97.03 (avg)	89.25	89.25	89.25
Chemical Oxygen Demand (COD) Intake	kg/d	Monthly Avg. Daily Max.	547.92 1926	MR MR	MR MR	MR MR
Chemical Oxygen Demand (COD) Intake	mg/L	Monthly Avg. Daily Max.	22.07 91	MR MR	MR MR	MR MR
Chemical Oxygen Demand (COD) Effluent Gross Value	kg/d	Monthly Avg. Daily Max.	2859.25 10731	MR MR	MR MR	MR MR
Chemical Oxygen Demand (COD) Effluent Gross Value	mg/L	Monthly Avg. Daily Max.	81.69 414	MR MR	MR MR	MR MR
Chemical Oxygen Demand (COD) Net	kg/d	Monthly Avg. Daily Max.	2311.18 10280	MR MR	MR MR	MR MR
Chemical Oxygen Demand (COD) Net	mg/L	Monthly Avg. Daily Max.	65.65 397	MR MR	MR MR	MR MR
Chemical Oxygen Demand (COD) Calculated Adjusted value (Ballast Water)	kg/d	Monthly Avg. Daily Max.	No ballast water discharged	MR MR	-- --	-- --
Chemical Oxygen Demand (COD) Precipitation	kg/d	Monthly Avg. Daily Max.	356.13 3211	MR MR	MR MR	MR MR
Chemical Oxygen Demand (COD) Effluent Adjusted Value	kg/d	Monthly Avg. Daily Max.	1934.59 9530	9649 18566	6825 13132	6825 13132
Total Suspended Solids (TSS) Intake	kg/d	Monthly Avg. Daily Max.	401.92 1418	MR MR	MR MR	MR MR
Total Suspended Solids (TSS) Intake	mg/L	Monthly Avg. Weekly Avg. Daily Max.	24 16.16 57	MR MR MR	MR MR MR	MR MR MR
Total Suspended Solids (TSS) Effluent Gross Value	kg/d	Monthly Avg. Daily Max.	496.63 7511	MR MR	MR MR	MR MR
Total Suspended Solids (TSS) Effluent Gross Value	mg/L	Monthly Avg. Weekly Avg. Daily Max.	25.68 14.10 290	MR MR MR	MR MR MR	MR MR MR
Total Suspended Solids (TSS) Net	kg/d	Monthly Avg. Daily Max.	96.58 7206	MR MR	MR MR	MR MR
Total Suspended Solids (TSS) Net	mg/L	Monthly Avg. Weekly Avg. Daily Max.	13.80 2.25 278	30 45 MR	30 45 MR	30 45 MR
Total Suspended Solids (TSS) Calculated Adjusted value (Ballast Water)	kg/d	Monthly Avg. Daily Max.	No ballast water discharged	MR MR	-- --	-- --
Total Suspended Solids (TSS) Precipitation	kg/d	Monthly Avg. Daily Max.	42.74 300	MR MR	MR MR	MR MR
Total Suspended Solids (TSS) Effluent Adjusted Value	kg/d	Monthly Avg. Daily Max.	53.86 1823	1170 1827	827 1293	827 1293
Total Dissolved Solids (TDS) Intake	kg/d	Monthly Avg. Daily Max.	4090 22169	MR MR	MR MR	MR MR
Total Dissolved Solids (TDS) Intake	mg/L	Monthly Avg. Daily Max.	198.84 604	MR MR	MR MR	MR MR
Total Dissolved Solids (TDS) Effluent Gross Value	kg/d	Monthly Avg. Daily Max.	30883.6 67898	MR MR	MR MR	MR MR

PARAMETER	UNITS	AVERAGING PERIOD	WASTEWATER DATA 1/2009 – 4/2014	EXISTING LIMITS	INITIAL LIMITS	FINAL LIMITS
Total Dissolved Solids (TDS) Effluent Gross Value	mg/L	Monthly Avg. Daily Max.	894.75 1910	MR MR	MR MR	MR MR
Total Dissolved Solids (TDS) Net	kg/d	Monthly Avg. Daily Max.	26791.9 52217	MR 60909	MR 60909	MR 60909
Total Dissolved Solids (TDS) Net	mg/L	Monthly Avg. Daily Max.	773.52 1578	MR MR	MR MR	MR MR
Oil and Grease Intake	kg/d	Monthly Avg. Instant Max. # Det. / # N.D.	24.49 88 29/35	MR MR	MR MR	MR MR
Oil and Grease Intake	mg/L	Monthly Avg. Instant Max. # Det. / # N.D.	1.08 3.7 29/35	MR MR	MR MR	MR MR
Oil and Grease Effluent Gross Value	kg/d	Monthly Avg. Instant Max. # Det. / # N.D.	106.78 773.1 60/4	MR MR	MR MR	MR MR
Oil and Grease Effluent Gross Value	mg/L	Monthly Avg. Instant Max. # Det. / # N.D.	3.08 21.5 60/4	MR MR	MR MR	MR MR
Oil and Grease Net	kg/d	Monthly Avg. Instant Max. # Det. / # N.D.	96.12 748.5 61/3	MR MR	MR MR	MR MR
Oil and Grease Net	mg/L	Monthly Avg. Instant Max. # Det. / # N.D.	2.4 20.8 61/3	10 15	10 15	10 15
Oil and Grease Calculated Adjusted value (Ballast Water)	kg/d	Monthly Avg. Daily Max.	No ballast water discharged	MR MR	-- --	-- --
Oil and Grease Precipitation	kg/d	Monthly Avg. Daily Max.	15.90 139	MR MR	MR MR	MR MR
Oil and Grease Effluent Adjusted Value	kg/d	Monthly Avg. Daily Max.	69.23 729	439 833	310 589	310 589
Ammonia (Total as N) Intake	kg/d	Monthly Avg. Daily Max.	10.39 56.1	MR MR	MR MR	MR MR
Ammonia (Total as N) Intake	mg/L	Monthly Avg. Daily Max.	0.46 3.62	MR MR	MR MR	MR MR
Ammonia (Total as N) Effluent Gross Value	kg/d	Monthly Avg. Daily Max.	29.71 322	MR MR	MR MR	MR MR
Ammonia (Total as N) Effluent Gross value	mg/L	Monthly Avg. Daily Max.	0.79 10.4	MR MR	MR MR	MR MR
Ammonia (Total as N) Net	kg/d	Monthly Avg. Daily Max.	18.31 310	556 1213	393 858	393 858
Ammonia (Total as N) Net	mg/L	Monthly Avg. Daily Max.	0.50 10	35 MR	35 MR	35 MR
Total Chromium Intake	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	0.06 0.25 20/44	MR MR	MR MR	MR MR
Total Chromium Intake	mg/L	Monthly Avg. Daily Max. # Det. / # N.D.	0.0026 0.0084 20/44	MR MR	MR MR	MR MR
Total Chromium Effluent Gross Value	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	0.08 0.18 13/51	MR MR	MR MR	MR MR
Total Chromium Effluent Gross Value	mg/L	Monthly Avg. Daily Max. # Det. / # N.D.	0.0023 0.0055 13/51	MR MR	MR MR	MR MR

PARAMETER	UNITS	AVERAGING PERIOD	WASTEWATER DATA 1/2009 – 4/2014	EXISTING LIMITS	INITIAL LIMITS	FINAL LIMITS
Total Chromium Net	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	0.0065 0.09 19/45	MR MR	MR MR	MR MR
Total Chromium Net	mg/L	Monthly Avg. Daily Max. # Det. / # N.D.	0.000095 0.002 19/45	MR MR	MR MR	MR MR
Total Chromium Precipitation	kg/d	Monthly Avg. Daily Max.	0.43 5.35	MR MR	MR MR	MR MR
Total Chromium Effluent Adjusted Value	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	-0.40 -0.15 49/15	6.07 17.43	6.06 17.40	6.06 17.40
Chromium, Hexavalent Intake	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	0.04 0.13 56/8	MR MR	MR MR	MR MR
Chromium, Hexavalent Intake	mg/L	Monthly Avg. Daily Max. # Det. / # N.D.	0.0018 0.006 56/8	MR MR	MR MR	MR MR
Chromium, Hexavalent Effluent Gross Value	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	0.056 0.22 58/6	MR MR	MR MR	MR MR
Chromium, Hexavalent Effluent Gross Value	mg/L	Monthly Avg. Daily Max. # Det. / # N.D.	0.0015 0.007 58/6	MR MR	MR MR	MR MR
Chromium, Hexavalent Net	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	0.018 0.16 58/6	MR MR	MR MR	MR MR
Chromium, Hexavalent Net	mg/L	Monthly Avg. Daily Max. # Det. / # N.D.	0.00019 0.005 58/6	MR 0.1	MR 0.1	MR 0.1
Chromium, Hexavalent Precipitation	kg/d	Monthly Avg. Daily Max.	0.05 0.56	MR MR	MR MR	MR MR
Chromium, Hexavalent Effluent Adjusted Value	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	-0.036 0.068 61/3	0.50 1.12	0.50 1.12	0.50 1.12
Total Recoverable Phenolics Intake	kg/d	Monthly Avg. Daily Max.	0.06 0.44	MR MR	MR MR	MR MR
Total Recoverable Phenolics Intake	mg/L	Monthly Avg. Daily Max.	0.06 2.0	MR MR	MR MR	MR MR
Total Recoverable Phenolics Effluent Gross Value	kg/d	Monthly Avg. Daily Max.	0.24 1.12	MR MR	MR MR	MR MR
Total Recoverable Phenolics Effluent Gross Value	mg/L	Monthly Avg. Daily Max.	0.01 0.06	MR MR	MR MR	MR MR
Total Recoverable Phenolics Net	kg/d	Monthly Avg. Daily Max.	0.18 1.03	MR MR	MR MR	MR MR
Total Recoverable Phenolics Net	mg/L	Monthly Avg. Daily Max.	0.005 0.03	MR MR	MR MR	MR MR
Total Recoverable Phenolics Precipitation	kg/d	Monthly Avg. Daily Max.	0.33 3.1	MR MR	MR MR	MR MR
Total Recoverable Phenolics Effluent Adjusted Value	kg/d	Monthly Avg. Daily Max.	-0.1538 0.369	5.19 19.44	5.18 13.75	5.18 13.75
Sulfide Intake	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	0.45 2.92 42/22	MR MR	MR MR	MR MR

PARAMETER	UNITS	AVERAGING PERIOD	WASTEWATER DATA 1/2009 – 4/2014	EXISTING LIMITS	INITIAL LIMITS	FINAL LIMITS
Sulfide Intake	mg/L	Monthly Avg. Daily Max. # Det. / # N.D.	0.11 0.14 42/22	MR MR	MR MR	MR MR
Sulfide Effluent Gross Value	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	1.20 19.2 59/5	MR MR	MR MR	MR MR
Sulfide Effluent Gross Value	mg/L	Monthly Avg. Daily Max. # Det. / # N.D.	0.022 0.4 59/5	MR MR	MR MR	MR MR
Sulfide Net	kg/d	Monthly Avg. Daily Max. # Det. / # N.D.	0.70 7.1 60/4	7.75 17.25	5.48 12.20	5.48 12.20
Sulfide Net	mg/L	Monthly Avg. Daily Max. # Det. / # N.D.	0.0093 0.19 60/4	MR MR	MR MR	MR MR
Methyl tert-butyl Ether (MTBE)	µg/L	Monthly Avg. Daily Max. # Det. / # N.D.	14.14 30 7/3	MR MR	MR MR	MR MR
Tertiary Butyl Alcohol (TBA)	µg/L	Monthly Avg. Daily Max. # Det. / # N.D.	<30 <30 0/10	MR MR	-- --	-- --
Acute Toxicity, LC50	%	Minimum	94.5 (avg) (8 data points) >100 (3 data points)	≥100 (2)	MR (3)	MR(3)
Chronic Toxicity, IC25	%	Minimum	35.58 (avg) (20 data points) >100 (1 data point)	MR	MR	MR

Footnotes and Abbreviations:

MR Monitor and report only

- (1) Influent sampling required for BOD₅ shall be performed before the dissolved air floatation unit.
- (2) This limitation was stayed and changed to the existing limitation of LC50 ≥ 50%.
- (3) The permittee shall meet the Acute WET Action Level of LC50 ≥ 50%.

DSN 002A: Emergency Stormwater Discharge*

PARAMETER	UNITS	AVERAGING PERIOD	WASTEWATER DATA	EXISTING LIMIT	FINAL LIMITS
Flow, In Conduit or Thru Treatment Plant	MGD	Monthly Avg. Daily Max.	3.94 14.1	MR MR	MR MR
Chemical Oxygen Demand (COD)	mg/L	Monthly Avg. Daily Max.	48.31 83	MR MR	MR MR
Total Suspended Solids (TSS)	mg/L	Monthly Avg. Daily Max.	15.07 54	MR 50	MR 50
pH	S.U.	Instant Min. Instant Max.	6.6 8.4	6.0 9.0	6.0 9.0
Oil and Grease	mg/L	Monthly Avg. Daily Max. # Det. / # N.D.	3.47 17.7 7/4	MR 15	MR 15

Footnotes and Abbreviations:

MR Monitor and report only

* Stormwater discharge may contain a minimal amount of process wastewater.

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Contents of the Administrative Record

The following items are used to establish the basis of the Draft Permit:

Rules and Regulations:

1. 33 U.S.C. 1251 et seq., Federal Water Pollution Control Act. [B]
2. 40 CFR Part 131, Federal Water Quality Standards. [B]
3. 40 CFR Part 122, National Pollutant Discharge Elimination System. [B]
4. N.J.S.A. 58:10A-1 et seq., New Jersey Water Pollution Control Act. [A]
5. N.J.A.C. 7:14A-1 et seq., New Jersey Pollutant Discharge Elimination System Regulations. [A]
6. N.J.A.C. 7:9B-1 et seq., New Jersey Surface Water Quality Standards. [A]
7. N.J.A.C. 7:15, Statewide Water Quality Management Planning Rules. [A]
8. N.J.A.C. 7:14C, Sludge Quality Assurance Regulations. [A]
9. Delaware River Basin Commission: Administrative Manual – Part III Water Quality Regulations.

Guidance Documents / Reports:

1. "Field Sampling Procedures Manual", published by the NJDEP.
2. "NJPDES Monitoring Report Form Reference Manual", updated December 2007, and available on the web at http://www.state.nj.us/dep/dwq/pdf/MRF_Manual.pdf.
3. "EPA Technical Support Document for Water Quality-based Toxics Control", EPA/505/2-90-001, March 1991. [A]
4. New Jersey's 2012 Integrated Water Quality Monitoring and Assessment Report (includes 305 (b) Report 303(d) List). [A] [B]
5. Draft "Technical Manual for Reclaimed Water for Beneficial Reuse", published by NJDEP, October 2002. [A]
6. "Development of a Tidal Version of the Cormix Models for Application to Discharges in the Delaware Estuary" dated December 1995 and prepared by Limno-Tech, Inc. under the direction of the DRBC.
7. Standard Compliance and Inspection Reports for Inspections conducted on May 23, 2014, April 3, 2013, May 3, 2012, March 17, 2011, and June 1, 2016.

Permits / Applications:

1. NJPDES/DSW Permit Application dated December 20, 2011.
2. Existing Draft NJPDES/DSW Permit NJ0005029, issued November 29, 2006.
3. Existing NJPDES/DSW Permit NJ0005029, issued April 10, 2007 and effective July 1, 2007.

Correspondences:

1. Correspondence dated June 3, 2010 from Pilar Patterson of the Department to Michael Pesch of Valero Refining Company, regarding a stay of the Acute WET effluent limitation.

Meetings / Site Visits:

1. Site Visit on November 5, 2014.

Footnotes:

- [A] Denotes items that may be found on the New Jersey Department of Environmental Protection (NJDEP) website located at "<http://www.state.nj.us/dep/>".
- [B] Denotes items that may be found on the United States Environmental Protection Agency (USEPA) website at "<http://www.epa.gov/>".

Table A: Effluent limitation analysis for the Toxic Metals, Organic Compounds, Cyanide, and other pollutants; effluent flow of 9.19 MGD and stream hardness of 100 mg/L.

Parameter	Data set time period	Number of data points	Coefficient of variation (CV)	Maximum reported data value (µg/L) (1)	Calculated instream WLA (µg/L) B	"Cause" Y = yes N = no A > B ?	Aquatic criteria LTA (µg/L)	Water quality based limit, if applicable (µg/L)
Total Recoverable Zinc	September 2005 to December 2013	(dt) = 14 (nd) = 0	0.71 (ca)	63.65* (max)	(a) = 318.724* (c) = NA (h) = NA (hc) = NA	(a) = N (c) = NA (h) = NA (hc) = NA	(a) = 92.84** (c) = NA	MDL = 335.50** AML = 195.37** NOT IMPOSED

(1) For human health carcinogen (hc) water quality based calculations, the data set's long-term average equivalent is used instead of the maximum reported data value. For human health carcinogen (hc) existing effluent quality limitations, the maximum reported data value is used.

Footnotes and Abbreviations:

(dt) = Data values detected.	(a) = acute aquatic	LTA = Long Term Average	MR = Monitor and Report
(nd) = Data values non-detected.	(c) = chronic aquatic	WLA = Waste Load Allocation	
(d) = Default CV	(h) = human health non-carcinogen	MDL = Maximum Daily Limit	
(ca) = Calculated from data set.	(hc) = human health carcinogen	AML = Average Monthly Limit	
(max) = Maximum	(*) = Dissolved	EEQ = Existing Effluent Quality	
(LTAeq) = Long Term Average equivalent	(**) = Total Recoverable	N/A = Not Applicable	

**Table B: Limitation Derivation Worksheets: Calculation of Technology Based Limitations
Using the Petroleum Refining Effluent Limitation Guidelines**

40 CFR Part 419.40 Subpart D-Lube Subcategory

Based on the existing permit renewal, the Refinery Feedstock Rate (RFR) is 168,300 barrels per day. The Department is using the maximum total refinery feedstock rate as well as all the individual process feedstock rates utilized in the existing permit as explained in Section 6.B above. The following table lists the processes currently in operation at the refinery:

1. Calculation Procedure for the derivation of BPT/BCT limitations for BOD₅, TOC, TSS, Oil and Grease; BPT level of treatment for Phenolics, Total Chromium, and Hexavalent Chromium; and BPT and BAT levels of treatment for Ammonia and Sulfide:

In accordance with 40 CFR 419.42, 43 and 44 any existing point source subject to these subparts must achieve the effluent limitations specified in the tables in these sections. Furthermore, these limits are to be multiplied by the Size Factor and Process Factor specified in the tables at 40 CFR 419.42, 43 and 44(b)(1) and (2). This calculation procedure is illustrated at the end of this section.

As illustrated in the example calculation at 40 CFR 419.42(b)(3), the Process Factor (PF) is based on the Total Process Configuration Factor, which in turn is calculated by adding the weighted unit process configuration factors of the unit processes operational at this refinery that are included in the flow model described in Section IX, Pages 148-151 of the Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Petroleum Refining Point Source Category, EPA 440/1-74-014-a, April 1974 (1974 Flow Model). Unless specifically authorized by the USEPA, refinery unit processes other than those listed in this section may not be used to calculate the applicable technology based limitations.

Processes Utilized (40 CFR 419 App A)	Capacity (1000 bbl per stream day)	Capacity Relative To Throughput	Weighting Factor (1)	Unit Process Configuration Factor
Crude 6 and Crude 7:				
Atmospheric crude distillation	156.6	0.93		
Vacuum crude distillation	82.3	0.49		
Desalting	156.6	0.93		
Total Crude	395.5	2.35	1	2.35
Cracking & Coking:				

Fluid Catalytic Cracking	48.9	0.29		
Delayed Coking	21.7	0.13		
Hydrotreating (2)	64.2	0.38 = 0		
Total Cracking & Coking	134.8	0.42	6	2.52
Lube:				
Lube Hydro	13.0	0.08		
Propane Deasphalting	10.5	0.06		
Furfural Extraction	22.1	0.13		
Total Lube	45.6	0.27	13	3.51
Asphalt:				
Asphalt Production	9.5	0.06	12	0.72
Reforming & Alkylation:				
Hydrofluoric Alkylation (2)	9.0	0.05		
Catalytic Reforming	25.8	0.15		
Total Reforming & Alkylation	34.8	0.20	0	0.00
Total Refinery Process Configuration				9.1

- (1) Weighting Factors for the individual processes operational at the refinery are specified in the 1974 Flow Model and are also included in the example calculation at 40 CFR 419.42(b)3.
- (2) Although Hydrotreating and Hydrofluoric Alkylation are operational at this refinery, these processes were not included in the 1974 Flow Model that was used to develop the weighting factors; therefore, the weighting factors for these processes were given a value of 0 and they do not affect the calculated value for the Total Refinery Process Configuration that is used to determine the BPT and BCT limitations for all regulated parameters and BAT limitations for Ammonia (as N) and sulfide (as S).

Calculation Procedure for the derivation of BPT/BCT limitations for BOD, TSS, Oil and Grease, BPT/BAT limitations for COD, Ammonia and Sulfide, and BPT limitations for Phenolics, Total Chromium, and Hexavalent Chromium:

BPT, BAT and BCT limitations were calculated using the ELGs, Size Factor (SF) and Process Factor (PF) information found in 40 CFR 419.42, 40 CFR 419.43, and 40 CFR 419.44 respectively.

Based on 40 CFR 419.42, 43 and 44(b)(1), SF = 1.05 for a RFR of 168,300 bbl/d.

In accordance with 40 CFR 419.42(b)(3), the PF is based on the total process configuration factor, which in turn is calculated by adding the weighted unit process configuration factors of the unit processes that are operational at this refinery as shown this table.

In accordance with 40 CFR 419.42, 43 and 44(b)(2), the PF for the calculated Process Configuration of $9.1 = 1.29$.

As shown in the example at 40 CFR 419.42(b)(3), to calculate the limits for each parameter, multiply the ELGs specified at 40 CFR 419.42, 43 and 44 by the PF and SF.

Therefore, limits/1000 bbl of feedstock = (ELGs)(SF)(PF) and based on the RFR of 168, 300 bbl/day, the final applicable technology based limits/day = (RFR)(ELGs)(SF)(PF)

$$1 \text{ lb} = 0.453592 \text{ kg}$$

[illegible]

BPT									
Phenolic Compounds	0.133	0.065	1.05	1.29	168.3	30.32	14.82	13.75	6.72
Total Chromium	0.273	0.160	1.05	1.29	168.3	62.23	36.47	28.23	16.54
Hexavalent Chromium	0.024	0.011	1.05	1.29	168.3	5.47	2.51	2.48	1.14

Notes: 227.96235

- (1) BPT and BCT effluent limitations for these parameters are identical
- (2) BPT and BAT effluent limitations for these parameters are identical

Calculation Procedure for the derivation of BAT limitations for Phenolic Compounds, Total Chromium and Hexavalent Chromium:

In accordance with 40 CFR 419.43(c)(1)(i), BAT limits for Phenolic Compounds, Total Chromium and Hexavalent Chromium are the sum of the products of each effluent limitation factor listed in 40 CFR 419.43(c)(1)(i) times the applicable process feedstock rate.

Pollutant	Process Feedstock Rate (1)	ELGs lbs/1000bbl Max/day	Final Limits lbs/day Max/day	ELGs lbs/1000bbl 30 day avg.	Final Limits lbs/day 30 day avg.
<u>Phenolic Compounds</u>					
	C = 395.5	0.013	5.14	0.003	1.19
	K = 134.8	0.147	19.82	0.036	4.85
	L = 45.6	0.369	16.83	0.090	4.10
	A = 9.5	0.079	0.75	0.019	0.18
	R = 34.8	0.132	4.59	0.032	1.11
			Total = 47.13 lbs/day		Total = 11.43 lbs/day
			(21.38 kg/day)		(5.18 kg/day)
<u>Total Chromium</u>					
	C = 395.5	0.011	4.35	0.004	1.58
	K = 134.8	0.119	16.04	0.041	5.53
	L = 45.6	0.299	13.63	0.104	4.74
	A = 9.5	0.064	0.61	0.022	0.21
	R = 34.8	0.107	3.72	0.037	1.29
			Total = 38.35 lbs/day		Total = 13.35 lbs/day

			(17.40 kg/day)		(6.06 kg/day)
<u>Hexavalent Chromium</u>					
	C = 395.5	0.0007	0.28	0.0003	0.12
	K = 134.8	0.0076	1.02	0.0034	0.46
	L = 45.6	0.0192	0.88	0.0087	0.40
	A = 9.5	0.0041	0.04	0.0019	0.02
	R = 34.8	0.0069	0.24	0.0031	0.11
			Total = 2.46 lbs/day		Total = 1.11 lbs/day
			(1.12 kg/day)		(0.50 kg/day)

Footnotes:

(1) C = Crude, K = Cracking and Coking, L = Lube, A = Asphalt, R = Reforming and Alkylation process.

Comparing the BPT and BAT limits for Phenolic Compounds, Total Chromium and Hexavalent Chromium:

	Phenolic Compounds	Phenolic Compounds	Total Chromium	Total Chromium	Hexavalent Chromium	Hexavalent Chromium
	Max, kg/day	Avg., kg/day	Max, kg/day	Avg., kg/day	Max, kg/day	Avg., kg/day
BAT Limit	21.38	5.18	17.40	6.06	1.12	0.50
BPT Limit	13.75	6.72	28.23	16.53	2.48	1.14
Permit Limit (1)	13.75	5.18	17.40	6.06	1.12	0.50

Footnotes:

(1) Applicable ELG is shown in **Bold** in the table above

Delaware River
Zone 4

Paulsboro Refining Company
NJ0005029
DSN 001A

Paulsboro Refining Company
NJ0005029
DSN 002A

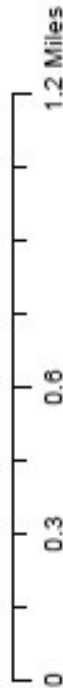


USGSTopographical Map

Paulsboro Refining Company

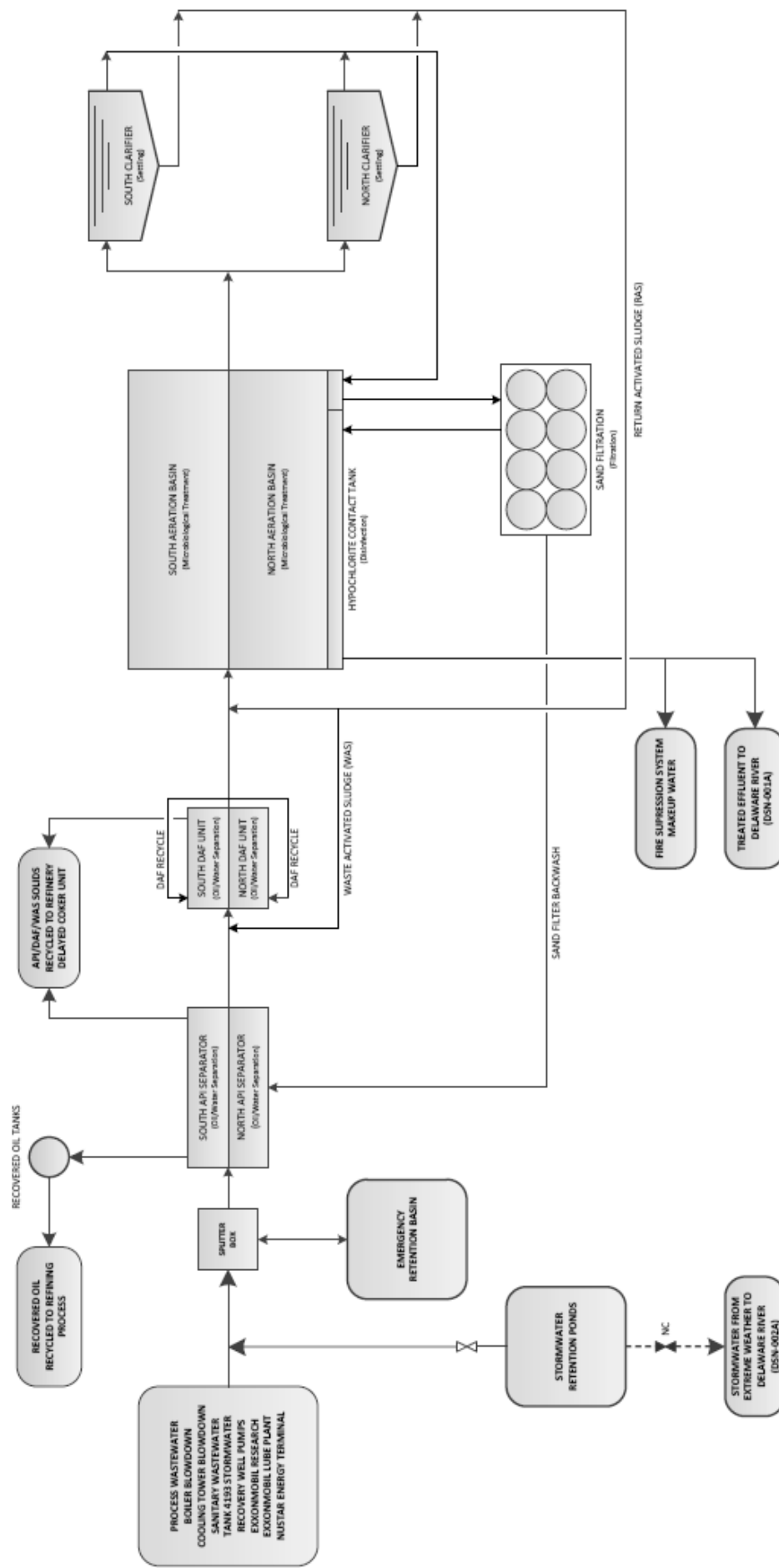
Greenwich Twp., Gloucester County

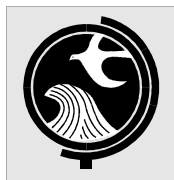
Sub-Watershed: Nehonsey Brook/Clonmell Creek (LDRV to Mantua Creek)





011 Average Inlet Air Flow = 7.336 MGD
011 Average Steamwater Flow = 0.655 MGD
011 Average Groundwater Flow = 1.701 MGD





NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

The New Jersey Department of Environmental Protection hereby grants you a NJPDES permit for the facility/activity named in this document. This permit is the regulatory mechanism used by the Department to help ensure your discharge will not harm the environment. By complying with the terms and conditions specified, you are assuming an important role in protecting New Jersey's valuable water resources. Your acceptance of this permit is an agreement to conform with all of its provisions when constructing, installing, modifying, or operating any facility for the collection, treatment, or discharge of pollutants to waters of the state. If you have any questions about this document, please feel free to contact the Department representative listed in the permit cover letter. Your cooperation in helping us protect and safeguard our state's environment is appreciated.

Permit Number: NJ0005029

Draft: Surface Water Renewal Permit Action

Permittee:

Paulsboro Refining Co LLC
800 Billingsport Road
Paulsboro, NJ 08066

Co-Permittee:

Property Owner:

Paulsboro Refining Co LLC
800 Billingsport Road
Paulsboro, NJ 08066

Location Of Activity:

Paulsboro Refining Co
800 Billingsport Road
Greenwich Twp., Gloucester County

Authorization(s) Covered Under This Approval	Issuance Date	Effective Date	Expiration Date
B - Industrial Wastewater - Renewal	PENDING	PENDING	PENDING

By Authority of:
Commissioner's Office

DEP AUTHORIZATION
Pilar Patterson, Chief
Bureau of Surface Water Permitting
Division of Water Quality

(Terms, conditions and provisions attached hereto)

Division of Water Quality

PART I GENERAL REQUIREMENTS: NJPDES

A. General Requirements of all NJPDES Permits

1. Requirements Incorporated by Reference

- a. The permittee shall comply with all conditions set forth in this permit and with all the applicable requirements incorporated into this permit by reference. The permittee is required to comply with the regulations, including those cited in paragraphs b. through e. following, which are in effect as of the effective date of the final permit.
- b. General Conditions
 - Penalties for Violations N.J.A.C. 7:14-8.1 et seq.
 - Incorporation by Reference N.J.A.C. 7:14A-2.3
 - Toxic Pollutants N.J.A.C. 7:14A-6.2(a)4i
 - Duty to Comply N.J.A.C. 7:14A-6.2(a)1 & 4
 - Duty to Mitigate N.J.A.C. 7:14A-6.2(a)5 & 11
 - Inspection and Entry N.J.A.C. 7:14A-2.11(e)
 - Enforcement Action N.J.A.C. 7:14A-2.9
 - Duty to Reapply N.J.A.C. 7:14A-4.2(e)3
 - Signatory Requirements for Applications and Reports N.J.A.C. 7:14A-4.9
 - Effect of Permit/Other Laws N.J.A.C. 7:14A-6.2(a)6 & 7 & 2.9(c)
 - Severability N.J.A.C. 7:14A-2.2
 - Administrative Continuation of Permits N.J.A.C. 7:14A-2.8
 - Permit Actions N.J.A.C. 7:14A-2.7(c)
 - Reopener Clause N.J.A.C. 7:14A-6.2(a)10
 - Permit Duration and Renewal N.J.A.C. 7:14A-2.7(a) & (b)
 - Consolidation of Permit Process N.J.A.C. 7:14A-15.5
 - Confidentiality N.J.A.C. 7:14A-18.2 & 2.11(g)
 - Fee Schedule N.J.A.C. 7:14A-3.1
 - Treatment Works Approval N.J.A.C. 7:14A-22 & 23
- c. Operation And Maintenance
 - Need to Halt or Reduce not a Defense N.J.A.C. 7:14A-2.9(b)
 - Proper Operation and Maintenance N.J.A.C. 7:14A-6.12
- d. Monitoring And Records
 - Monitoring N.J.A.C. 7:14A-6.5
 - Recordkeeping N.J.A.C. 7:14A-6.6
 - Signatory Requirements for Monitoring Reports N.J.A.C. 7:14A-6.9
- e. Reporting Requirements
 - Planned Changes N.J.A.C. 7:14A-6.7
 - Reporting of Monitoring Results N.J.A.C. 7:14A-6.8
 - Noncompliance Reporting
 - Hotline/Two Hour & Twenty-four Hour Reporting N.J.A.C. 7:14A-6.10 & 6.8(h)
 - Written Reporting N.J.A.C. 7:14A-6.10(c) & (d)
 - Duty to Provide Information N.J.A.C. 7:14A-6.10(e) & (f) & 6.8(h)
 - Schedules of Compliance N.J.A.C. 7:14A-2.11, 6.2(a)14 & 18.1
 - Transfer N.J.A.C. 7:14A-6.4
 - N.J.A.C. 7:14A-6.2(a)8 & 16.2

PART II

GENERAL REQUIREMENTS: DISCHARGE CATEGORIES

A. Additional Requirements Incorporated By Reference

1. Requirements for Discharges to Surface Waters

- a. In addition to conditions in Part I of this permit, the conditions in this section are applicable to activities at the permitted location and are incorporated by reference. The permittee is required to comply with the regulations which are in effect as of the effective date of the final permit.
 - i. Surface Water Quality Standards N.J.A.C. 7:9B-1
 - ii. Water Quality Management Planning Regulations N.J.A.C. 7:15

B. General Conditions

1. Scope

- a. The issuance of this permit shall not be considered as a waiver of any applicable federal, state, and local rules, regulations and ordinances.

2. Permit Renewal Requirement

- a. Permit conditions remain in effect and enforceable until and unless the permit is modified, renewed or revoked by the Department.
- b. Submit a complete permit renewal application: 180 days before the Expiration Date.

3. Notification of Non-Compliance

- a. The permittee shall notify the Department of all non-compliance when required in accordance with N.J.A.C. 7:14A-6.10 by contacting the DEP HOTLINE at 1-877-WARNDEP (1-877-927-6337).
- b. The permittee shall submit a written report as required by N.J.A.C. 7:14A-6.10 within five days.

4. Notification of Changes

- a. The permittee shall give written notification to the Department of any planned physical or operational alterations or additions to the permitted facility when the alteration is expected to result in a significant change in the permittee's discharge and/or residuals use or disposal practices including the cessation of discharge in accordance with N.J.A.C. 7:14A-6.7.
- b. Prior to any change in ownership, the current permittee shall comply with the requirements of N.J.A.C. 7:14A-16.2, pertaining to the notification of change in ownership.

5. Access to Information

- a. The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to enter upon a person's premises, for purposes of inspection, and to access / copy any records that must be kept under the conditions of this permit.

6. Operator Certification

- a. Pursuant to N.J.A.C. 7:10A-1.1 et seq. every wastewater system not exempt pursuant to N.J.A.C. 7:10A-1.1(b) requires a licensed operator. The operator of a system shall meet the Department's requirements pursuant to N.J.A.C. 7:10A-1.1 and any amendments. The name of the proposed operator, where required shall be submitted to the Department at the address below, in order that his/her qualifications may be determined prior to initiating operation of the treatment works.
 - i. Notifications shall be submitted to:
Bureau of Licensing and Pesticide Operations
Mailcode 401-04E
P.O. Box 420
Trenton, New Jersey 08625-0420
(609) 984-6507.
- b. The permittee shall notify the Department of any changes in licensed operator within two weeks of the change.

7. Operation Restrictions

- a. The operation of a waste treatment or disposal facility shall at no time create: (a) a discharge, except as authorized by the Department in the manner and location specified in Part III of this permit; (b) any discharge to the waters of the state or any standing or ponded condition for water or waste, except as specifically authorized by a valid NJPDES permit.

8. Residuals Management

- a. The permittee shall comply with land-based sludge management criteria and shall conform with the requirements for the management of residuals and grit and screenings under N.J.A.C. 7:14A-6.15(a), which includes:
 - i. Standards for the Use or Disposal of Residual, N.J.A.C. 7:14A-20;
 - ii. Section 405 of the Federal Act governing the disposal of sludge from treatment works treating domestic sewage;
 - iii. The Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and the Solid Waste Management Rules, N.J.A.C. 7:26;
 - iv. The Sludge Quality Assurance Regulations, N.J.A.C. 7:14C;
 - v. The Statewide Sludge Management Plan promulgated pursuant to the Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq., and the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq.; and
 - vi. The provisions concerning disposal of sewage sludge and septage in sanitary landfills set forth at N.J.S.A. 13:1E-42 and the Statewide Sludge Management Plan.
 - vii. Residual that is disposed in a municipal solid waste landfill unit shall meet the requirements in 40 CFR Part 258 and/or N.J.A.C. 7:26 concerning the quality of residual disposed in a municipal solid waste landfill unit. (That is, passes the Toxicity Characteristic Leaching Procedure and does not contain "free liquids" as defined at N.J.A.C. 7:14A-1.2.)

- b. If any applicable standard for residual use or disposal is promulgated under section 405(d) of the Federal Act and Sections 4 and 6 of the State Act and that standard is more stringent than any limitation on the pollutant or practice in the permit, the Department may modify or revoke and reissue the permit to conform to the standard for residual use or disposal.
- c. The permittee shall make provisions for storage, or some other approved alternative management strategy, for anticipated downtimes at a primary residual management alternative. The permittee shall not be permitted to store residual beyond the capacity of the structural treatment and storage components of the treatment works. N.J.A.C. 7:14A-20.8(a) and N.J.A.C. 7:26 provide for the temporary storage of residuals for periods not exceeding six months, provided such storage does not cause pollutants to enter surface or ground waters of the State. The storage of residual for more than six months is not authorized under this permit. However, this prohibition does not apply to residual that remains on the land for longer than six months when the person who prepares the residual demonstrates that the land on which the residual remains is not a surface disposal site or landfill. The demonstration shall explain why residual must remain on the land for longer than six months prior to final use or disposal, discuss the approximate time period during which the residual shall be used or disposed and provide documentation of ultimate residual management arrangements. Said demonstration shall be in writing, be kept on file by the person who prepares residual, and submitted to the Department upon request.
- d. The permittee shall comply with the appropriate adopted District Solid Waste or Sludge Management Plan (which by definition in N.J.A.C. 7:14A-1.2 includes Generator Sludge Management Plans), unless otherwise specifically exempted by the Department.
- e. The preparer must notify and provide information necessary to comply with the N.J.A.C. 7:14A-20 land application requirements to the person who applies bulk residual to the land. This shall include, but not be limited to, the applicable recordkeeping requirements and certification statements of 40 CFR 503.17 as referenced at N.J.A.C. 7:14A-20.7(j).
- f. The preparer who provides residual to another person who further prepares the residual for application to the land must provide this person with notification and information necessary to comply with the N.J.A.C. 7:14A-20 land application requirements.
- g. Any person who prepares bulk residual in New Jersey that is applied to land in a State other than New Jersey shall comply with the requirement at N.J.A.C. 7:14A-20.7(b)1.ix to submit to the Department written proof of compliance with or satisfaction of all applicable statutes, regulations, and guidelines of the state in which land application will occur.

PART III

LIMITS AND MONITORING REQUIREMENTS

MONITORED LOCATION:

001A DSN 001A-DSW

RECEIVING STREAM:

Delaware River

STREAM CLASSIFICATION:

Mainstem Delaware-Zone 4

DISCHARGE CATEGORY(IES):

B - Industrial Wastewater

Location Description

Influent samples shall be obtained before the dissolved air floatation unit. Intake samples shall be obtained at the pump house. Composite effluent samples (with the exception of WET) shall be obtained at the composite sampler which is located in the building which houses the sand filters. WET samples shall be obtained at the parshall flume (post-chlorination) with a composite sampler. Grab samples shall be obtained after all chlorination occurs. DSN 001A discharges to Zone 4 of the Delaware River at Lat 39d, 50', 41.2" and Lon 75d, 16', 17.2". The Precipitation sample point refers to stormwater. Effluent Adjusted Value is calculated by subtracting the stormwater (Precipitation) allocation from the Effluent Net Value.

Contributing Waste Types

Contact Cooling Water, Groundwater Remediation, Petro Ref ELG process H₂O, Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements**PHASE:1 Initial****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	MGD	*****	*****	*****	*****	Continuous	Metered
January thru December	QL	***	***		***	***	***			
Flow, In Conduit or Thru Treatment Plant	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	MGD	*****	*****	*****	*****	Continuous	Metered
January thru December	QL	***	***		***	***	***			
Flow, Total	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	MGD	*****	*****	*****	*****	1/Month	Measured
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	4/Month	Calculated
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements**PHASE:1 Initial****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
BOD, 5-Day (20 oC)	Raw Sew/influent	*****	*****	*****	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	4/Month	Grab
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	4/Month	24 Hour Composite
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Effl. Adjusted Value	1114 Monthly Average	1851 Daily Maximum	KG/DAY	*****	*****	*****	*****	4/Month	Calculated
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	4/Month	Calculated
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	4/Month	24 Hour Composite
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Percent Removal	*****	*****	*****	89.25 Monthly Av Minimum	*****	*****	PERCENT	4/Month	Calculated
January thru December	QL	***	***		***	***	***			
pH	Effluent Gross Value	*****	*****	*****	6.0 Instant Minimum	*****	9.0 Instant Maximum	SU	1/Week	Grab
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements**PHASE:1 Initial****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Solids, Total Suspended	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	REPORT Weekly Average	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Effl. Adjusted Value	827 Monthly Average	1293 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	45 Weekly Average	30 Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	REPORT Weekly Average	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Oil & Grease Tot Rec Hexane Extraction	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oil & Grease Tot Rec Hexane Extraction	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Grab
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements**PHASE:1 Initial****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Oil & Grease Tot Rec Hexane Extraction	Effl. Adjusted Value	310 Monthly Average	589 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oil & Grease Tot Rec Hexane Extraction	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	10 Monthly Average	15 Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oil & Grease Tot Rec Hexane Extraction	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Grab
January thru December	QL	***	***		***	***	***			
Nitrogen, Ammonia Total (as N)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Nitrogen, Ammonia Total (as N)	Effluent Net Value	393 Monthly Average	858 Daily Maximum	KG/DAY	*****	35 Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Nitrogen, Ammonia Total (as N)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
E. Coli	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Geo Avg	REPORT Instant Minimum	MPN/100ML	1/Week	Grab
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements**PHASE:1 Initial****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Solids, Total Dissolved (TDS)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Solids, Total Dissolved (TDS)	Effluent Net Value	REPORT Monthly Average	60909 Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Solids, Total Dissolved (TDS)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Coliform, Fecal General	Effluent Gross Value	*****	*****	*****	*****	200 Monthly Geo Avg	400 Weekly Geometric	#/100ML	1/Week	Grab
January thru December	QL	***	***		***	***	***			
LC50 Stat 96hr Acu Ceriodaphnia	Effluent Gross Value	*****	*****	*****	REPORT Report Per Minimum	*****	*****	%EFFL	2/Year	Composite
January thru December	AL	***	***		50	***	***			
LC50 Statre 96hr Acu Pimephales	Effluent Gross Value	*****	*****	*****	REPORT Report Per Minimum	*****	*****	%EFFL	2/Year	Composite
January thru December	AL	***	***		50	***	***			
IC25 Statre 7day Chr Pimephales	Effluent Gross Value	*****	*****	*****	REPORT Report Per Minimum	*****	*****	%EFFL	1/Quarter	Composite
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements**PHASE:1 Initial****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Chlorine Produced Oxidants	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Month	Grab
January thru December	QL	***	***		***	***	***			
Temperature, oC	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	40 Daily Maximum	DEG.C	Continuous	Metered
January thru December	QL	***	***		***	***	***			
Color (pt-co Units)	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	100 Daily Maximum	PT-CO	1/Year	Grab
January thru December	QL	***	***		***	***	***			
Oxygen Demand,Chem. (High Level) (COD)	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oxygen Demand,Chem. (High Level) (COD)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Oxygen Demand,Chem. (High Level) (COD)	Effl. Adjusted Value	6825 Monthly Average	13132 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oxygen Demand,Chem. (High Level) (COD)	Calculated Adjust.	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements**PHASE:1 Initial****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Oxygen Demand,Chem. (High Level) (COD)	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oxygen Demand,Chem. (High Level) (COD)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Phosphorus, Total (as P)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Quarter	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Sulfide, Total (as S)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Sulfide, Total (as S)	Effluent Net Value	5.48 Monthly Average	12.20 Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Sulfide, Total (as S)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Phenolics, Total Recoverable	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements**PHASE:1 Initial****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Phenolics, Total Recoverable	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Grab
January thru December	QL	***	***		***	***	***			
Phenolics, Total Recoverable	Effl. Adjusted Value	5.18 Monthly Average	13.75 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Phenolics, Total Recoverable	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Phenolics, Total Recoverable	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Grab
January thru December	QL	***	***		***	***	***			
Chromium, Hexavalent (as Cr)	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	2/Month	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Hexavalent (as Cr)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	2/Month	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Chromium, Hexavalent (as Cr)	Effl. Adjusted Value	0.50 Monthly Average	1.12 Daily Maximum	KG/DAY	*****	*****	*****	*****	2/Month	Calculated
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements**PHASE:1 Initial****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Chromium, Hexavalent (as Cr)	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	0.1 Daily Maximum	MG/L	2/Month	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Hexavalent (as Cr)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	2/Month	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Chromium, Total (as Cr)	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Month	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Total (as Cr)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Month	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Chromium, Total (as Cr)	Effl. Adjusted Value	6.06 Monthly Average	17.40 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Month	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Total (as Cr)	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Month	Calculated
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements**PHASE:1 Initial****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Chromium, Total (as Cr)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Month	24 Hour Composite
January thru December	QL	***	***		***	***	***			

Table III - A - 2: Surface Water DMR Limits and Monitoring Requirements**PHASE:3 Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	MGD	*****	*****	*****	*****	Continuous	Metered
January thru December	QL	***	***		***	***	***			
Flow, In Conduit or Thru Treatment Plant	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	MGD	*****	*****	*****	*****	Continuous	Metered
January thru December	QL	***	***		***	***	***			
Flow, Total	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	MGD	*****	*****	*****	*****	1/Month	Measured
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	4/Month	Calculated
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 2: Surface Water DMR Limits and Monitoring Requirements**PHASE:3 Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
BOD, 5-Day (20 oC)	Raw Sew/influent	*****	*****	*****	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	4/Month	Grab
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	4/Month	24 Hour Composite
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Effl. Adjusted Value	1114 Monthly Average	1851 Daily Maximum	KG/DAY	*****	*****	*****	*****	4/Month	Calculated
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	4/Month	Calculated
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	4/Month	24 Hour Composite
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Percent Removal	*****	*****	*****	89.25 Monthly Av Minimum	*****	*****	PERCENT	4/Month	Calculated
January thru December	QL	***	***		***	***	***			
pH	Effluent Gross Value	*****	*****	*****	6.0 Instant Minimum	*****	9.0 Instant Maximum	SU	1/Week	Grab
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 2: Surface Water DMR Limits and Monitoring Requirements**PHASE:3 Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Solids, Total Suspended	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	REPORT Weekly Average	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Effl. Adjusted Value	827 Monthly Average	1293 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	45 Weekly Average	30 Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	REPORT Weekly Average	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Oil & Grease Tot Rec Hexane Extraction	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oil & Grease Tot Rec Hexane Extraction	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Grab
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 2: Surface Water DMR Limits and Monitoring Requirements**PHASE:3 Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Oil & Grease Tot Rec Hexane Extraction	Effl. Adjusted Value	310 Monthly Average	589 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oil & Grease Tot Rec Hexane Extraction	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	10 Monthly Average	15 Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oil & Grease Tot Rec Hexane Extraction	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Grab
January thru December	QL	***	***		***	***	***			
Nitrogen, Ammonia Total (as N)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Nitrogen, Ammonia Total (as N)	Effluent Net Value	393 Monthly Average	858 Daily Maximum	KG/DAY	*****	35 Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Nitrogen, Ammonia Total (as N)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
E. Coli	Effluent Gross Value	*****	*****	*****	*****	126 Monthly Geo Avg	REPORT Instant Minimum	MPN/100ML	1/Week	Grab
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 2: Surface Water DMR Limits and Monitoring Requirements**PHASE:3 Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Solids, Total Dissolved (TDS)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Solids, Total Dissolved (TDS)	Effluent Net Value	REPORT Monthly Average	60909 Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Solids, Total Dissolved (TDS)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
LC50 Stat 96hr Acu Ceriodaphnia	Effluent Gross Value	*****	*****	*****	REPORT Report Per Minimum	*****	*****	%EFFL	2/Year	Composite
January thru December	AL	***	***		50	***	***			
LC50 Statre 96hr Acu Pimephales	Effluent Gross Value	*****	*****	*****	REPORT Report Per Minimum	*****	*****	%EFFL	2/Year	Composite
January thru December	AL	***	***		50	***	***			
IC25 Statre 7day Chr Pimephales	Effluent Gross Value	*****	*****	*****	REPORT Report Per Minimum	*****	*****	%EFFL	1/Quarter	Composite
January thru December	QL	***	***		***	***	***			
Chlorine Produced Oxidants	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Month	Grab
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 2: Surface Water DMR Limits and Monitoring Requirements**PHASE:3 Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Temperature, oC	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	40 Daily Maximum	DEG.C	Continuous	Metered
January thru December	QL	***	***		***	***	***			
Color (pt-co Units)	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	100 Daily Maximum	PT-CO	1/Year	Grab
January thru December	QL	***	***		***	***	***			
Oxygen Demand,Chem. (High Level) (COD)	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oxygen Demand,Chem. (High Level) (COD)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Oxygen Demand,Chem. (High Level) (COD)	Effl. Adjusted Value	6825 Monthly Average	13132 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oxygen Demand,Chem. (High Level) (COD)	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oxygen Demand,Chem. (High Level) (COD)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 2: Surface Water DMR Limits and Monitoring Requirements**PHASE:3 Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Phosphorus, Total (as P)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Quarter	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Sulfide, Total (as S)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Sulfide, Total (as S)	Effluent Net Value	5.48 Monthly Average	12.20 Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Sulfide, Total (as S)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Phenolics, Total Recoverable	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Phenolics, Total Recoverable	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Grab
January thru December	QL	***	***		***	***	***			
Phenolics, Total Recoverable	Effl. Adjusted Value	5.18 Monthly Average	13.75 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 2: Surface Water DMR Limits and Monitoring Requirements**PHASE:3 Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Phenolics, Total Recoverable	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Phenolics, Total Recoverable	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Week	Grab
January thru December	QL	***	***		***	***	***			
Chromium, Hexavalent (as Cr)	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	2/Month	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Hexavalent (as Cr)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	2/Month	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Chromium, Hexavalent (as Cr)	Effl. Adjusted Value	0.50 Monthly Average	1.12 Daily Maximum	KG/DAY	*****	*****	*****	*****	2/Month	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Hexavalent (as Cr)	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	0.1 Daily Maximum	MG/L	2/Month	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Hexavalent (as Cr)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	2/Month	24 Hour Composite
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please see Part IV Section G for the calculations of net values, stormwater allocation and ballast water allocation, as applicable.

Table III - A - 2: Surface Water DMR Limits and Monitoring Requirements**PHASE:3 Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Chromium, Total (as Cr)	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Month	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Total (as Cr)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Month	24 Hour Composite
January thru December	QL	***	***		***	***	***			
Chromium, Total (as Cr)	Effl. Adjusted Value	6.06 Monthly Average	17.40 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Month	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Total (as Cr)	Effluent Net Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Month	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Total (as Cr)	Intake From Stream	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Month	24 Hour Composite
January thru December	QL	***	***		***	***	***			

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 3: Surface Water WCR - Annual Limits and Monitoring Requirements**PHASE:**Final**PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Chloride (as Cl)	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Cyanide, Total (as CN)	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Arsenic, Total Recoverable (as As)	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Selenium, Total Recoverable	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Thallium, Total Recoverable	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Barium, Total Recoverable (as Ba)	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Nickel, Total Recoverable	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Silver, Total Recoverable	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Cadmium, Total Recoverable	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Lead, Total Recoverable	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Copper, Total Recoverable	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Antimony, Total Recoverable	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Mercury Total Recoverable	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Acenaphthylene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Acenaphthene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 3: Surface Water WCR - Annual Limits and Monitoring Requirements

PHASE:Final

PHASE Start Date:

PHASE End Date:

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Anthracene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Benzo(b)fluoranthene (3,4-benzo)	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Benzo(k)fluoranthene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Benzo(a)pyrene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Bis(2-chloroethyl) ether	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Bis(2-chloroethoxy) methane	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Bis (2-chloroiso- propyl) ether	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Butyl benzyl phthalate	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Chrysene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Diethyl phthalate	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Dimethyl phthalate	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
1,2-Diphenyl- hydrazine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Fluoranthene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Fluorene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Hexachlorocyclo- pentadiene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 3: Surface Water WCR - Annual Limits and Monitoring Requirements**PHASE:**Final**PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Hexachloroethane	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Indeno(1,2,3-cd)-pyrene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Isophorone	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
N-nitrosodi-n-propylamine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
N-nitrosodiphenyl-amine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
N-nitrosodimethyl-amine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Nitrobenzene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Phenanthrene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Pyrene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Benzo(ghi)perylene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Benzo(a)anthracene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
1,2-Dichlorobenzene	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
1,2,4-Trichloro-benzene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Dibenzo(a,h)anthracene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
1,3-Dichlorobenzene	Effluent Gross Value	REPORT	UG/L	Grab	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 3: Surface Water WCR - Annual Limits and Monitoring Requirements**PHASE:**Final**PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
1,4-Dichlorobenzene	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
2-Chloronaphthalene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Di-n-octyl Phthalate	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
2,4-Dinitrotoluene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
2,6-Dinitrotoluene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
3,3'-Dichloro-benzidine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
4-Bromophenyl phenyl ether	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Naphthalene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Bis(2-ethylhexyl) phthalate	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Di-n-butyl phthalate	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Benzidine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Malathion	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Demeton	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Hexachlorobenzene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Hexachlorobutadiene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 3: Surface Water WCR - Annual Limits and Monitoring Requirements**PHASE:**Final**PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Mirex	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
1,3-Dichloropropene	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
1,2,4,5-Tetrachloro-benzene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
N-nitrosodiethyl-amine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
N-nitrosopyrrolidine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Carbon Tetrachloride	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
1,2-Dichloroethane	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Bromoform	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Chloroform	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Toluene	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Benzene	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Acrolein	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Acrylonitrile	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Chlorobenzene	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Chlorodibromomethane	Effluent Gross Value	REPORT	UG/L	Grab	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 3: Surface Water WCR - Annual Limits and Monitoring Requirements**PHASE:**Final**PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Ethylbenzene	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Methyl Bromide	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Methyl Chloride	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Methylene Chloride	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Tetrachloroethylene	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Trichlorofluoro-methane	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
1,1-Dichloroethane	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
1,1-Dichloroethylene	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
1,1,1-Trichloro-ethane	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
1,1,2-Trichloro-ethane	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
1,1,2,2-Tetrachloro-ethane	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
1,2-Dichloropropane	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
1,2-trans-Dichloro-ethylene	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
2-Chloroethyl Vinyl Ether (Mixed)	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Bromodichloromethane	Effluent Gross Value	REPORT	UG/L	Grab	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 3: Surface Water WCR - Annual Limits and Monitoring Requirements**PHASE:**Final**PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Vinyl Chloride	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Trichloroethylene	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Methoxychlor	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
N-Nitrosodi-n-butylamine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Chloroethane	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Asbestos (Fibrous)	Effluent Gross Value	REPORT	FIBERS/L	24 Hour Composite	January thru December
Parachloro-m-cresol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Parathion	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Phenols	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
2,4,5-Trichloro-phenol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Delta BHC, Total (ug/l)	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Endosulfan Sulfate	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Beta Endosulfan	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Alpha Endosulfan	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Endrin Aldehyde	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 3: Surface Water WCR - Annual Limits and Monitoring Requirements**PHASE:**Final**PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
2,3,7,8-Tetrachloro-dibenzo-p-dioxin	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
4,4'-DDT(p,p'-DDT)	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
4,4'-DDD(p,p'-DDD)	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
4,4'-DDE(p,p'-DDE)	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Aldrin	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Alpha BHC	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Beta BHC	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Gamma BHC (lindane),	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Chlordane	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Dieldrin	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Endosulfans, Total (alpha and beta)	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Endrin	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Toxaphene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Heptachlor	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Heptachlor Epoxide	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 3: Surface Water WCR - Annual Limits and Monitoring Requirements**PHASE:**Final**PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Chlorpyrifos	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
2-Chlorophenol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
2-Nitrophenol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
2,4-Dichlorophenol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
2,4-Dimethylphenol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
2,4-Dinitrophenol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
2,4,6-Trichloro-phenol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
4-Chlorophenyl phenyl ether	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
4-Nitrophenol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
4,6-Dinitro-o-cresol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Phenol Single Compound	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Pentachlorophenol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Pentachlorobenzene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 3: Surface Water WCR - Annual Limits and Monitoring Requirements

PHASE:Final

PHASE Start Date:

PHASE End Date:

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Guthion	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Semi Annual Reporting Requirements:

Submit a Semi-Annual WCR: within twenty-five days after the end of every 6 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 4: Surface Water WCR - Semi Annual Limits and Monitoring Requirements

PHASE:Final

PHASE Start Date:

PHASE End Date:

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Zinc, Total Recoverable	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Methyl tert-butyl Ether	Effluent Gross Value	REPORT	UG/L	Grab	January thru December

MONITORED LOCATION:

002A DSN 002A-DSW

RECEIVING STREAM:

Delaware River

STREAM CLASSIFICATION:

Mainstem Delaware-Zone 4

DISCHARGE CATEGORY(IES):

B - Industrial Wastewater

Location Description

Samples shall be obtained after sedimentation occurs in the stormwater containment area. DSN 002A discharges to the Delaware River Zone 4 at Lat 39d, 50', 22.3" and Long 75d, 16', 23.9".

Contributing Waste Types

Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

In the event that extreme weather conditions result in process wastewater being mixed with the stormwater in the stormwater basins and there is a discharge to surface water from DSN002A, the permittee shall notify Enforcement in accordance with the requirements of N.J.A.C. 7:14A-6.10.

Table III - B - 1: Surface Water DMR Limits and Monitoring Requirements**PHASE:Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	MGD	*****	*****	*****	*****	1/Discharge	Calculated
January thru December	QL	***	***		***	***	***			
pH	Effluent Gross Value	*****	*****	*****	6.0 Instant Minimum	*****	9.0 Instant Maximum	SU	1/Discharge	Grab
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	50 Daily Maximum	MG/L	1/Discharge	Grab
January thru December	QL	***	***		***	***	***			
Oil & Grease Tot Rec Hexane Extraction	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	15 Daily Maximum	MG/L	1/Discharge	Grab
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

In the event that extreme weather conditions result in process wastewater being mixed with the stormwater in the stormwater basins and there is a discharge to surface water from DSN002A, the permittee shall notify Enforcement in accordance with the requirements of N.J.A.C. 7:14A-6.10.

Table III - B - 1: Surface Water DMR Limits and Monitoring Requirements**PHASE:**Final**PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Oxygen Demand, Chem. (High Level) (COD)	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	REPORT Daily Maximum	MG/L	1/Discharge	Grab
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:

SI8A SQAR-Sludge Tank

DISCHARGE CATEGORY(IES):

B - Industrial Wastewater

Location Description

Annually, a representative sample shall be obtained and analyzed pursuant to the Sludge Quality Assurance Regulations (SQAR, N.J.A.C. 7:14C) when sludge is removed off-site for use or disposal.

Contributing Waste Types

Ind Residual-Other

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - C - 1: Residuals DMR Limits and Monitoring Requirements

PHASE:Final

PHASE Start Date:

PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Solids, Total	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	% TS	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Styrene	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Barium, Total (as Ba)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Manganese, Total (as Mn)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - C - 1: Residuals DMR Limits and Monitoring Requirements**PHASE:**Final**PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Vanadium, Total (as V)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Arsenic, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Cobalt, Total (as Co)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Antimony, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Aluminum, Total (as Al)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Selenium, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Copper, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - C - 1: Residuals DMR Limits and Monitoring Requirements**PHASE:Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Beryllium Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Cadmium, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Lead, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Nickel, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Mercury, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Chromium, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Anthracene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - C - 1: Residuals DMR Limits and Monitoring Requirements**PHASE:Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Benzene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Benzo(k)fluoranthene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Benzo(a)pyrene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Butyl benzyl- phthalate, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Chrysene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Diethyl phthalate, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Dimethyl phthalate, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - C - 1: Residuals DMR Limits and Monitoring Requirements**PHASE:Final****PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Fluoranthene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Fluorene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Naphthalene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Phenanthrene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Benzo(a)anthracene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,2-Dichlorobenzene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Dibenzo(a,h) anthracene, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - C - 1: Residuals DMR Limits and Monitoring Requirements

PHASE:Final

PHASE Start Date:

PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
1,3-Dichlorobenzene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,4-Dichlorobenzene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Di-n-octyl Phthalate Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Bis(2-ethylhexyl) phthalate, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Di-n-butyl phthalate Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Chlorobenzene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Chloroform Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - C - 1: Residuals DMR Limits and Monitoring Requirements

PHASE:Final

PHASE Start Date:

PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Ethylbenzene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Toluene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,2-Dichloroethane, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Carbon disulfide	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,2-Dibromoethane	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Xylenes (Total)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Cyanide, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - C - 1: Residuals DMR Limits and Monitoring Requirements

PHASE:Final

PHASE Start Date:

PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Phenol, Single Compound, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
2,4-Dimethylphenol, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
2,4 Dinitrophenol, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
4-Nitrophenol, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals WCR - Annual Reporting Requirements:

Submit an Annual WCR: due 60 calendar days after the end of each calendar year.

Table III - C - 3: Residuals WCR - Annual Limits and Monitoring Requirements**PHASE:**Final**PHASE Start Date:****PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Amt Sludge Rmvd, Wet Cubic Yards	Industrial Residuals	REPORT	WCY/YR	Calculated	January thru December
Amt Sludge Rmvd, Wet Metric Tons	Industrial Residuals	REPORT	WMT/YR	Calculated	January thru December
Amt Sludge Rmvd, Gallons	Industrial Residuals	REPORT	GAL/YEAR	Calculated	January thru December
Total Amount of Sludge Removed	Industrial Residuals	REPORT	DMT/YR	Calculated	January thru December
Solids, Total	Industrial Residuals	REPORT	%TS	Composite	January thru December

Residuals Transfer Reporting Requirements:

Submit an Annual RTR: due 60 calendar days after the end of each calendar year.

PART IV

SPECIFIC REQUIREMENTS: NARRATIVE

Industrial Wastewater

A. MONITORING REQUIREMENTS

1. Standard Monitoring Requirements

- a. Each analysis required by this permit shall be performed by a New Jersey Certified Laboratory that is certified to perform that analysis.
- b. The Permittee shall perform all water/wastewater analyses in accordance with the analytical test procedures specified in 40 CFR 136 unless other test procedures have been approved by the Department in writing or as otherwise specified in the permit.
- c. When more than one test procedure is approved for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 CFR 136, 122.21 (e)(3), and 122.44(i)(1)(iv).
- d. All sampling shall be conducted in accordance with the Department's Field Sampling Procedures Manual, or an alternate method approved by the Department in writing.
- e. All monitoring shall be conducted as specified in Part III.
- f. All sample frequencies expressed in Part III are minimum requirements. Any additional samples taken consistent with the monitoring and reporting requirements contained herein shall be reported on the Monitoring Report Forms.
- g. Annual and semi-annual wastewater testing shall be conducted in a different quarter of each year so that tests are conducted in each of the four permit quarters of the permit cycle. Testing may be conducted during any month of the permit quarters.
- h. Monitoring for Wastewater Characterization Report parameters shall be conducted concurrently with the Whole Effluent Toxicity (WET) monitoring, when feasible.
- i. Any influent and effluent sampling for toxic pollutant analyses shall be collected concurrently.
- j. The permittee shall perform all residual analyses in accordance with the analytical test procedures specified in 40 CFR 503.8 and the Sludge Quality Assurance Regulations (N.J.A.C. 7:14C) unless other test procedures have been approved by the Department in writing or as otherwise specified in the permit.
- k. Effluent flow shall be measured using a flow meter at DSN 001A. Stormwater flow that is treated at the wastewater treatment plant shall be calculated as described in sections G.2.b and G.3.b respectively. Effluent flow at DSN 002A (when a discharge occurs) shall be calculated using the discharge rate associated with the pump curve for the pump used in conjunction with routing any discharge through DSN 002A.

1. The Department has imposed a monitoring frequency of "four times per month" for the BOD5 and BOD5 percent removal parameters. The permittee shall ensure that sampling is performed at least once each week for the first three weeks of the month. For example, it would not be acceptable if the permittee sampled on the first, second, third and fourth days of a month to satisfy this requirement. Instead, an acceptable sampling scheme would be to sample on the first, sixth, twelfth, and eighteenth days of a month thereby allowing several days between each sample and ensuring that at least one sample is taken during each of the first three weeks in the month.

B. RECORDKEEPING

1. Standard Recordkeeping Requirements

- a. The permittee shall retain records of all monitoring information, including 1) all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation (if applicable), 2) copies of all reports required by this NJPDES permit, 3) all data used to complete the application for a NJPDES permit, and 4) monitoring information required by the permit related to the permittee's residual use and/or disposal practices, for a period of at least 5 years, or longer as required by N.J.A.C. 7:14A-20, from the date of the sample, measurement, report, application or record.
- b. Records of monitoring information shall include 1) the date, locations, and time of sampling or measurements, 2) the individual(s) who performed the sampling or measurements, 3) the date(s) the analyses were performed, 4) the individual(s) who performed the analyses, 5) the analytical techniques or methods used, and 6) the results of such analyses.

C. REPORTING

1. Standard Reporting Requirements

- a. The permittee shall submit all required monitoring results to the Department on the forms provided to them. The Monitoring Report Forms (MRFs) may be provided to the permittee in either a paper format or in an electronic file format. Unless otherwise noted, all requirements below pertain to both paper and electronic formats.
- b. Any MRFs in paper format shall be submitted to the following addresses:
 - i. NJDEP
Division of Water Quality
Bureau of Permit Management
Mailcode 401-02B
P.O. Box 420
Trenton, New Jersey 08625-0420.
 - ii. Delaware River Basin Commission (DRBC)
P. O. Box 7360
West Trenton, New Jersey 08628
 - iii. (if requested by the Water Compliance and Enforcement Bureau)
NJDEP: Southern Bureau of Water Compliance and Enforcement
One Port Center
2 Riverside Drive, Suite 201
Camden, New Jersey 08103

- c. Any electronic data submission shall be in accordance with the guidelines and provisions outlined in the Department's Electronic Data Interchange (EDI) agreement with the permittee. Paper copies must be available for on-site inspection by DEP personnel or provided to the DEP upon written request.
- d. All monitoring report forms shall be certified by the highest ranking official having day-to-day managerial and operational responsibilities for the discharging facility.
- e. The highest ranking official may delegate responsibility to certify the monitoring report forms in his or her absence. Authorizations for other individuals to sign shall be made in accordance with N.J.A.C. 7:14A-4.9(b).
- f. Monitoring results shall be submitted in accordance with the current Monitoring Report Form (MRF) Reference Manual and any updates thereof.
- g. If monitoring for a parameter is not required in a monitoring period, the permittee must report "CODE=N" for that parameter.
- h. If there are no discharge events during an entire monitoring period, the permittee must notify the Department when submitting the monitoring results. This is accomplished by placing a check mark in the "No Discharge this monitoring period" box on the paper or electronic version of the monitoring report submittal form.

D. SUBMITTALS

1. Standard Submittal Requirements

- a. The permittee shall amend the Operation & Maintenance Manual whenever there is a change in the treatment works design, construction, operations or maintenance which substantially changes the treatment works operations and maintenance procedures.

2. Delaware River Basin PCB Requirements

- a. On December 15, 2003, the U.S. EPA, Regions 2 and 3, adopted a Total Maximum Daily Load (TMDL) for PCBs for Zones 2, 3, 4, and 5 of the tidal Delaware River. On December 15, 2006, the U.S. EPA, Regions 2 and 3, adopted a Total Maximum Daily Load (TMDL) for PCBs for Zone 6 (Delaware Bay). The TMDLs require the facilities identified as discharging PCBs to these zones of the Delaware River or to the tidal portions of tributaries to these zones to conduct monitoring for 209 PCB congeners, and prepare and implement a PCB Pollutant Minimization Plan (PMP).
- b. Subsequent monitoring required by DRBC in 2005 confirmed the presence of PCBs, and indicates that this facility contributes to 99% of the cumulative loadings from all point sources. Therefore, the permittee shall collect two 24-hour composite or grab (as determined by DRBC Sampling protocol) samples annually during a wet weather flow and two 24-hour composite samples annually during a dry weather flow. The samples shall be collected from Outfall DSN 001A for dry weather sampling and DSN 001A for wet weather sampling.

- c. All sample analyses shall be performed using EPA Method 1668A, Revision A: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by HRGC/HRMS. EPA-821-R-00-002, December 1999 as supplemented or amended, and results for all 209 PCB congeners shall be reported. Project-specific, sample collection protocols, analytical procedures, and reporting requirements at <http://www.state.nj.us/drbc/quality/toxics/pcbs/monitoring.html> shall be followed. Monitoring information, sample data, and reports associated with PCB monitoring shall be submitted to the Department and DRBC in the form of two compact discs in the format referenced at <http://www.state.nj.us/drbc/library/documents/PCB-EDD011309.pdf>.
- d. In accordance with the U.S. EPA Regions 2 and 3 Total Maximum Daily Loads (TMDLs) for PCBs for Zones 2-5 of the Tidal Delaware River, the permittee submitted a Pollutant Minimization Plan (PMP) for PCBs to the DRBC in October 2005 which was approved on January 17, 2006. The permittee shall continue to comply with the requirements of Section 4.30.9 of DRBC's Water Quality Regulations. Therefore, the permittee shall:
 - i. Continue to implement the PMP to achieve PCB loading reduction goals, and;
 - ii. Submit an Annual Report on the yearly anniversary of the commencement of the PMP to DRBC and the Department consistent with the guidance specified at <http://www.state.nj.us/drbc/programs/quality/pmp.html>.
- e. The PMP (if needed), PMP Annual Reports, and PCB data shall be submitted to the Department and DRBC at the following addresses:
 - i. NJ Department of Environmental Protection
Mailcode 401-02B
Division of Water Quality, Bureau of Surface Water Permitting
401 East State Street
P.O. Box 420
Trenton, NJ 08625-0420.
 - ii. Delaware River Basin Commission
Modeling, Monitoring & Assessment Branch
P.O. Box 7360
West Trenton, NJ 08628

E. FACILITY MANAGEMENT

1. Discharge Requirements

- a. The permittee shall discharge at the location(s) specified in PART III of this permit.
- b. The permittee shall not discharge foam or cause foaming of the receiving water that: 1) Forms objectionable deposits on the receiving water, 2) Forms floating masses producing a nuisance, or 3) Interferes with a designated use of the waterbody.
- c. The permittee's discharge shall not produce objectionable color or odor in the receiving stream.
- d. The discharge shall not exhibit a visible sheen.

- e. The Permittee is authorized to use the following corrosion inhibitors, biocides, or other cooling water additives:

BL-122, CL-2150, CTI-9807, BL-1302, CL-4892, BL-1260, CL-4125, CTI-9856, BL-8100, CN-135, BL-1283, CL-5852, P-813E, BL-8104, CT-30, BL-1559, CT-904, P-824L, CL-240, CT-38, BL-4357, CTI-9802, P-899L, CL-2212, DG-301.

If the permittee decides to begin using any additional additives in the future that have active ingredients equivalent to the above listed, the permittee shall only be required to notify the Bureau of Surface Water Permitting prior to their use. This notification shall consist of all relevant information, including Material Safety Data Sheets and applicable aquatic toxicity data. However, if the permittee decides to begin using any additional additives that are chemically different from the above listed, the permittee shall notify this Bureau at least 180 days prior to use so that the permit may be reopened to incorporate any additional limitations and/or monitoring requirements deemed necessary.

2. Delaware River Basin Commission (DRBC)

- a. The permittee shall comply with the Delaware River Basin Commission (DRBC) "Water Quality Regulations." Compliance may be determined by the DRBC based on its own sampling events.
- b. The Delaware River Basin Commission (DRBC) 20-day Carbonaceous Biochemical (first-stage) Oxygen Demand (CBOD20) wasteload allocation of 3192 pounds per day (1448 kg/day) as a monthly average value, (equivalent to the monthly average BOD5 mass effluent limit, in Part III) shall not be exceeded. The CBOD20 effluent value may be calculated by multiplying the measured effluent BOD5 by a CBOD20/BOD5 mass ratio of 1.3 developed for this discharge by DRBC.
- c. During colder months when effluent temperatures can average below 59 degrees F (15 degrees C) and treatment plant efficiencies are likely to be adversely affected, DRBC may permit a discharger to exceed the allocation, it's equivalent mass BOD5 limit, and the zone percent removal requirement by up to an average of two-thirds during that month, provided it is demonstrated to DRBC that the exceedance is temperature induced.

3. Applicability of Discharge Limitations and Effective Dates

- a. Surface Water Discharge Monitoring Report (DMR) Form Requirements
- i. This permit includes multiple phases for DSN 001A.
The Initial Phase limitation and monitoring conditions are effective from the effective date of the permit (EDP) up to and including EDP + 12 months. Interim Phase limitations and monitoring conditions are effective from EDP + 13 months up to and including EDP +36 months. The Final limitation and monitoring conditions become effective on EDP + 37 months.
- b. Wastewater Characterization Report (WCR) Form Requirements
- i. The final effluent monitoring conditions contained in PART III for DSN 001A apply for the full term of this permit action.

4. Operation, Maintenance and Emergency conditions

- a. The permittee shall operate and maintain treatment works and facilities which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit as specified in the Operation & Maintenance Manual.
- b. The permittee shall develop emergency procedures to ensure effective operation of the treatment works under emergency conditions in accordance with NJAC 7:14A-6.12(d).

5. Toxicity Testing Requirements - Acute Whole Effluent Toxicity

- a. The permittee shall conduct toxicity tests on its wastewater discharge in accordance with the provisions in this section. Such testing will determine if appropriately selected effluent concentrations adversely affect the test species.
- b. Part III of this permit contains an Action Level (AL) for acute Whole Effluent Toxicity. Toxicity Reduction and Implementation Requirements may be triggered based on exceedences of this Action Level. See Toxicity Reduction and Implementation Requirements section below for more details.
- c. Any test that does not meet the specifications of N.J.A.C. 7:18, laboratory certification regulations, must be repeated within 30 days of the completion of the initial test. The repeat test shall not replace subsequent testing required in Part III.
- d. The permittee shall collect and analyze the concentration of ammonia-N in the effluent on the day a sample is collected for WET testing. This result is to be reported on the Biomonitoring Report Form.
- e. Acute toxicity testing shall initially consist of concurrent acute toxicity tests, with split effluent samples, using the test species and methods identified in Part III of this permit.
- f. The results for the most sensitive test species will be used to evaluate compliance with the WET limitation.
- g. Testing with two species will be considered complete when four sets of acceptable concurrent tests using split samples on the two species, have been completed and the data has been deemed sufficient to designate the more sensitive species.
- h. After completing four sets of concurrent toxicity tests on two species, the Department may modify the permit to reduce testing to the more sensitive test species.
- i. The permittee shall resubmit an Acute Methodology Questionnaire within 60 days of any change in laboratory.
- j. Submit an acute whole effluent toxicity test report: within twenty-five days after the end of every 6 month monitoring period beginning from the effective date of the permit (EDP). The permittee shall submit toxicity test results on appropriate forms.
- k. Test reports shall be submitted to:
 - i. New Jersey Department of Environmental Protection
Mailcode 401-02B
Division of Water Quality
Bureau of Surface Water Permitting
401 East State Street
P.O. Box 420
Trenton, New Jersey 08625-0420.

6. Toxicity Testing Requirements - Chronic Whole Effluent Toxicity

- a. The permittee shall conduct toxicity tests on its wastewater discharge in accordance with the provisions in this section. Such testing will determine if appropriately selected effluent concentrations adversely affect the test species.
- b. Chronic toxicity tests shall be conducted using the test species and method identified in Part III of this permit.
- c. Any test that does not meet the specifications contained in the Department's "Chronic Toxicity Testing Specifications for Use in the NJPDES Program" document must be repeated within 30 days of the completion of the initial test. The repeat test shall not replace subsequent testing required in Part III.
- d. The permittee shall collect and analyze the concentration of ammonia-N in the effluent on the day a sample is collected for WET testing. This result is to be reported on the Biomonitoring Report Form.
- e. IC25 - Inhibition Concentration - Concentration of effluent which has an inhibitory effect on 25% of the test organisms for the monitored effect, as compared to the control (expressed as percent effluent).
- f. Test results shall be expressed as the IC25 for each test endpoint. Where a chronic toxicity testing endpoint yields IC25's from more than one test endpoint, the most sensitive endpoint will be used to evaluate effluent toxicity.
- g. When reporting to the Delaware River Basin Commission (DRBC), sample results shall be expressed as No Observed Effect Concentration (NOEC).
- h. The permittee shall resubmit a Chronic Methodology Questionnaire within 60 days of any change in laboratory.
- i. Submit a chronic whole effluent toxicity test report: within twenty-five days after the end of every quarterly monitoring period beginning from the effective date of the permit (EDP). The permittee shall submit toxicity test results on appropriate forms.
- j. Test reports shall be submitted to:
 - i. New Jersey Department of Environmental Protection
Mailcode 401-02B
Division of Water Quality
Bureau of Surface Water Permitting
401 East State Street
P.O. Box 420
Trenton, New Jersey 08625-0420.
 - ii. Delaware River Basin Commission (DRBC)
P. O. Box 7360
West Trenton, New Jersey 08628

7. Toxicity Reduction Implementation Requirements (TRIR)

- a. The permittee shall initiate a tiered toxicity investigation if two out of six consecutive WET tests demonstrate that the effluent does not comply or will not comply with the toxicity limit or action level specified in Part III of this permit.

- i. If the exceedence of the toxicity limit or action level is directly caused by a documented facility upset, or other unusual event which has been identified and appropriately remedied by the permittee, the toxicity test data collected during the event may be eliminated when determining the need for initiating a TRIR upon written Department approval.
- b. The permittee shall begin toxicity characterization within 30 days of the end of the monitoring period when the second toxicity test exceeds the toxicity limits or action levels in Part III. The monitoring frequency for toxicity testing shall be increased to monthly. Up to 12 additional tests may be required.
 - i. The permittee may return to the toxicity testing frequency specified in Part III if four consecutive toxicity tests conducted during the Toxicity Characterization do not exceed the toxicity limit or action level.
 - ii. If two out of any six consecutive, acceptable tests again exceed the toxicity limit or action level in Part III, the permittee shall repeat the Toxicity Reduction Implementation Requirements.
- c. The permittee shall initiate a preliminary toxicity identification (PTI) upon the third exceedence of the toxicity limit or action level specified in Part III during toxicity characterization.
 - i. The permittee may return to the monitoring frequency specified in PART III while conducting the PTI. If more frequent WET testing is performed during the PTI, the permittee shall submit all biomonitoring reports to the DEP and report the results for the most sensitive species on the DMR.
 - ii. As appropriate, the PTI shall include:
 - (1) treatment plant performance evaluation,
 - (2) pretreatment program information,
 - (3) evaluation of ammonia and chlorine produced oxidants levels and their effect on the toxicity of the discharge,
 - (4) evaluation of chemical use and processes at the facility, and
 - (5) an evaluation of incidental facility procedures such as floor washing, and chemical spill disposal which may contribute to effluent toxicity.
 - iii. If the permittee demonstrates that the cause of toxicity is the chlorine added for disinfection or the ammonia concentration in the effluent and the chlorine and/or ammonia concentrations are below the established water quality based effluent limitation for chlorine and/or ammonia, the permittee shall identify the procedures to be used in future toxicity tests to account for chlorine and/or ammonia toxicity in their preliminary toxicity identification report.
 - iv. The permittee shall submit a Preliminary Toxicity Identification Notification within 15 months of triggering TRIR. This notification shall include a determination that the permittee intends to demonstrate compliance OR plans to initiate a CTI.
- d. The permittee must demonstrate compliance with the WET limitation or action level in four consecutive WET tests to satisfy the requirements of the Toxicity Reduction Investigation Requirements. After successful completion, the permittee may return to the WET monitoring frequency specified in PART III.
- e. The permittee shall initiate a Comprehensive Toxicity Investigation (CTI) if the PTI does not identify the cause of toxicity and a demonstration of consistent compliance with the toxicity limit or action level in Part III can not be made.

- i. The permittee shall develop a project study plan identifying the party or parties responsible for conducting the comprehensive evaluation, establish a schedule for completing the study, and a description of the technical approach to be utilized.
 - ii. If the permittee determines that the PTI has failed to demonstrate consistent compliance with the toxicity limit or action level in Part III , a Comprehensive Toxicity Investigation Workplan must be prepared and submitted within 90 days.
 - iii. The permittee shall summarize the data collected and the actions taken in CTI Quarterly Reports. The reports shall be submitted within 30 calendar days after the end of each quarter.
 - iv. The permittee shall submit a Final CTI Report 90 calendar days after the last quarterly report. The final CTI report shall include the corrective actions identified to reduce toxicity and a schedule for implementing these corrective actions.
- f. Upon receipt of written approval from the Department of the corrective action schedule, the permittee shall implement those corrective actions consistent with that schedule.
- i. The permittee shall satisfy the requirements of the Toxicity Reduction Implementation Requirements and return to the original toxicity monitoring frequency after corrective actions are implemented and the permittee demonstrates consistent compliance with the toxicity limit or action level in Part III in four consecutive toxicity tests.
 - ii. If the implemented corrective measures do not result in consistent compliance with the toxicity limit or action level in Part III, the permittee shall submit a plan for resuming the CTI.
 - iii. Documents regarding Toxicity Investigations shall be sent to the following:
New Jersey Department of Environmental Protection
401-02B
Division of Water Quality
Bureau of Surface Water Permitting
401 East State Street
P.O. Box 420
Trenton, New Jersey 08625-0420

8. Introduction to RWBR Requirements

- a. The following RWBR sections contain the conditions for the permittee to beneficially reuse treated effluent or Reclaimed Water for Beneficial Reuse (RWBR), provided the effluent is in compliance with the criteria specified for the particular use specified below.
- b. There are two levels of RWBR uses. Public Access and Restricted Access.

9. RWBR Requirements for Public Access

- a. The Public Access reuse types authorized by this permit are those approved in Appendix B. Other Public Access reuse types may be added by minor modification of this permit.
- b. The hydraulic loading rate for land application of RWBR shall not exceed 2 inches per week.
- c. Any water diverted for RWBR shall be monitored and comply with the high level treatment requirements listed below and the operational requirements in the approved Operations Protocol. If any of these requirements are not achieved, the effluent shall not be diverted for RWBR.
 - i. Total Suspended Solids (TSS): Instantaneous maximum of 5.0 mg/L prior to disinfection.

- ii. Nitrogen, Total ($\text{NO}_3 + \text{NH}_3$): Daily maximum of 10.0 mg/L. This requirement only applies when RWBR is land applied.
 - iii. Fecal Coliform: 7-day median maximum of 2.2 colonies per 100 mL and an instantaneous maximum of 14 colonies per 100 mL.
 - iv. Chlorine Produced Oxidants (CPO): If the permittee disinfects utilizing chlorine, an instantaneous minimum of 1.0 mg/L after fifteen minutes contact time at peak hourly flow must be met.
- d. Monitoring of the diverted public access RWBR shall be conducted in the following manner:
- i. Sampling for TSS shall be immediately prior to disinfection. Monitoring for TSS shall be a grab sample once per week.
 - ii. Sampling for Turbidity in systems shall be sampled immediately prior to disinfection. The permittee shall establish a correlation between Turbidity and TSS in their effluent as detailed in the Reuse Technical Manual. A statistically significant correlation between Turbidity and TSS shall be established prior to commencement of the RWBR program and shall be incorporated into the Operations Protocol and updated annually. The initial correlation should be done as part of a daily monitoring program for at least 30 days. To ensure continuous compliance with the 5.0 mg/L TSS level, Turbidity must be monitored continuously and achieve the level established in the Operations Protocol.
 - iii. For chlorine disinfection, monitoring for CPO shall be continuous and shall be monitored after the appropriate contact time is achieved.
 - iv. Monitoring for Fecal Coliform shall be a grab sample, taken in accordance with Part III, at least a minimum of once per week taken immediately after disinfection. Fecal coliform shall be monitored immediately after disinfection.
 - v. Monitoring for Total Nitrogen ($\text{NO}_3 + \text{NH}_3$) shall be a composite sample, taken in accordance with Part III, at least once per week taken prior to RWBR diversion. Total Nitrogen ($\text{NO}_3 + \text{NH}_3$) shall be monitored after the appropriate disinfection treatment is achieved.
- e. All monitoring results of the RWBR shall be reported each month on Wastewater Characterization Reports (WCR). Unless noted otherwise, the highest of all measured values for diverted RWBR shall be reported.
- i. If chlorine is used for disinfection, the lowest sampling result obtained during the reporting month shall be reported for CPO.

10. RWBR Requirements for Restricted Access--Land Application and Non Edible Crops

- a. The Restricted Access--Land Application and Non Edible Crops reuse types authorized by this permit are those approved in Appendix B. Other Restricted Access--Land Application and Non Edible Crops reuse types may be added by minor modification of this permit.
- b. The hydraulic loading rate for land application of RWBR shall not exceed 2 inches per week.
- c. Any water diverted for RWBR shall be monitored and comply with the high level treatment requirements listed below and the operational requirements in the approved Operations Protocol. If any of these requirements are not achieved, the effluent shall not be diverted for RWBR.

- d. Nitrogen, Total (NO₃ + NH₃): Daily maximum of 10 mg/L. Frequency of sampling for Total Nitrogen shall be at a minimum monthly. The sample shall be collected as a composite sample taken prior to diversion for RWBR. Nitrogen, Total (NO₃ + NH₃) shall be monitored after the appropriate disinfection treatment time is achieved. This requirement only applies when RWBR is land applied, however, this requirement does not apply to spray irrigation within a fenced perimeter or otherwise restricted area.
- e. The effluent shall comply with the permit limitations for Fecal Coliform and E. Coli as specified in the Effluent Limitations Tables at Part III of the permit. The frequency for sampling for Fecal Coliform and E. Coli shall be in accordance with Part III of this permit. The sample shall be collected as a grab sample taken immediately after disinfection.
- f. Chlorine Produced Oxidants (CPO): For chlorine disinfection, instantaneous minimum of 1.0 mg/L after fifteen minutes contact time at peak hourly flow. Frequency of sampling for CPO shall be in accordance with Part III of this permit. The sample shall be collected as a grab sample taken immediately after disinfection. The value reported for CPO shall be the minimum sampling result obtained during the reporting month for diverted RWBR. Chlorine Produced Oxidants (CPO) shall be monitored after the appropriate contact time is achieved.
- g. All monitoring results of the RWBR shall be reported each month on Wastewater Characterization Reports (WCR). Unless noted otherwise, the highest of all measured values for diverted RWBR shall be reported.

11. RWBR Requirements for Restricted Access--Construction and Maintenance Operations

- a. The Restricted Access--Construction and Maintenance Operations reuse types authorized by this permit are those approved in Appendix B. Other Restricted Access--Construction and Maintenance Operations reuse types may be added by minor modification of this permit.
- b. The effluent shall comply with the permit limitations for E. Coli as specified in the Effluent Limitations Tables at Part III of the permit. The frequency for sampling for E. Coli shall be in accordance with Part III of this permit. The sample shall be collected as a grab sample taken immediately after disinfection.

12. RWBR Requirements for Restricted Access--Industrial Systems

- a. The Restricted Access--Industrial Systems reuse types authorized by this permit are those approved in Appendix B. Other Restricted Access--Industrial Systems reuse types may be added by minor modification of this permit.

13. RWBR Submittal Requirements

- a. For all types of RWBR, with the exception of sanitary sewer jetting and STP washdown water, the permittee shall submit and receive approval of an Operations Protocol or modify the existing Operations Protocol as detailed in the most recent version of the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse" (Reuse Technical Manual) prior to the commencement of any RWBR activity. A copy of the approved Operations Protocol shall be maintained onsite. Specific requirements for the Operations Protocol are identified in the Reuse Technical Manual.
- b. The permittee shall submit a copy of the Reuse Supplier and User Agreement with each request for authorization to distribute RWBR in which the user is a different entity than the supplier. Specific requirements for the Reuse Supplier and User Agreement are identified in the Reuse Technical Manual.

- c. For Public Access RWBR on Edible Crops, the permittee shall submit an annual inventory of edible crop irrigation with the Beneficial Reuse Annual Report. Specific requirements for the annual inventory are identified in the Reuse Technical Manual.
- d. Submit a Beneficial Reuse Annual Report: by February 1 of each year beginning from the effective date of the permit (EDP). The permittee shall compile the total volume of RWBR distributed to each type of authorized RWBR activity for the previous calendar year. Specific requirements for the Annual Reuse Report are identified in the Reuse Technical Manual.
- e. The permittee shall submit and receive approval of an Engineering Report in support of RWBR authorization requests for new or expanded RWBR projects as detailed in the most recent version of the Department's "Technical Manual for Reclaimed Water for Beneficial Reuse" (Reuse Technical Manual) prior to the commencement of this/these type/s of RWBR activity. A copy of the approved Engineering Report shall be maintained onsite. Specific requirements for the Engineering Report are identified in the Reuse Technical Manual.
- f. All submittals shall be mailed or delivered to: New Jersey Department of Environmental Protection, Division of Water Quality, Bureau of Surface Water Permitting, Mailcode 401-02B, P.O. Box 420, Trenton, New Jersey 08625-0420.

14. RWBR Operational Requirements

- a. Effluent that does not meet the requirements for RWBR established in Part III, Part IV and the operational requirements specified in the facility's approved Operations Protocol shall not be diverted for RWBR.
- b. The land application of RWBR shall not produce surface runoff or ponding.
- c. All setback distances shall be consistent with the distances outlined in the Reuse Technical Manual.
- d. Land application sites shall not be frozen or saturated when applying RWBR.
- e. A daily log noting the volume of RWBR distributed to each approved application site shall be maintained on-site by the permittee and made available to the Department upon request. The volume of RWBR to be distributed shall be determined through the use of a totalizing flow meter, or other means of accurate flow measurement.
- f. Any vehicle used to transport and/or distribute RWBR shall be appropriately marked. The vehicle shall not be used to transport water or other fluid that does not meet all limitations and requirements as specified in this permit for water diverted for RWBR, unless the tank has been emptied and adequately cleaned prior to the addition of the RWBR.
- g. The permittee shall post Access Control and Advisory Signs in accordance with the requirements of the Reuse Technical Manual.
- h. There shall be no cross-connections to potable water systems.
- i. All RWBR piping, pipelines, valves, and outlets shall be appropriately color coded, tagged or labeled to warn the public and employees that the water is not intended for drinking. Worker contact with RWBR shall be minimized.
- j. The issuance of this permit for the use of RWBR shall not be considered as a waiver of any applicable federal, state or local rule, regulation or ordinance.

F. CONDITIONS FOR MODIFICATION**1. Notification requirements**

- a. The permittee may request a minor modification for a reduction in monitoring frequency for a non-limited parameter when four consecutive test results of "not detected" have occurred using the specified QL.

2. Causes for modification

- a. The Department may modify or revoke and reissue any permit to incorporate 1) any applicable effluent standard or any effluent limitation, including any effluent standards or effluent limitations to control the discharge of toxic pollutants or pollutant parameters such as acute or chronic whole effluent toxicity and chemical specific toxic parameters, 2) toxicity reduction requirements, or 3) the implementation of a TMDL or watershed management plan adopted in accordance with N.J.A.C. 7:15-7.
- b. The permittee may request a minor modification to eliminate the monitoring requirements associated with a discharge authorized by this permit when the discharge ceases due to changes at the facility.

G. Custom Requirement**1. Net Limitations**

- a. Net limitations have been imposed for BOD5, COD, TDS, TSS, Oil and Grease, Ammonia-Nitrogen, Total Recoverable Chromium, Hexavalent Chromium, Total Recoverable Phenolics, and Total Sulfides. Intake sampling for net limitation calculations shall be performed using a 24-hour composite sample type with the exception of intake Oil and Grease and Total Recoverable Phenolics, which shall be monitored as a grab sample. Only that portion of water used from the river intake is eligible for net limits and shall be reported on the DMR form under the "Intake from Stream" sample point.

Net values are calculated using the procedure below for each sampling event:

$$\begin{aligned} M_{\text{net}} &= M_{\text{gross}} - \text{Min}, \\ M_{\text{gross}} &= Q_{\text{gross}} \times C_{\text{gross}} \times 3.785, \\ \text{Min} &= Q_{\text{in}} \times C_{\text{in}} \times 3.785 \text{ where,} \end{aligned}$$

M_{net} = net mass value, kg/day - calculated from the equations above
 M_{gross} = mass of pollutant at outfall, kg/day - calculated by the permittee
 Min = mass of pollutant at intake, kg/day - calculated by the permittee
 Q_{gross} = flow at outfall, MGD, measured by the permittee
 C_{gross} = concentration of pollutant at outfall, mg/l
 Q_{in} = total river water intake flow, MGD, measured by the permittee
 C_{in} = concentration of pollutant at intake, mg/l - measured by the permittee
 and,
 C_{net} is the net concentration of pollutant in mg/L converted from mass values, therefore,
 $C_{\text{net}} = M_{\text{net}} / Q_{\text{gross}} \times 3.785.$

2. Stormwater Allocation

- a. The ELGs in the Petroleum Refining Point Source Category include credit for the pollutants BOD5, TSS, Oil and Grease, Total Recoverable Phenolics, Total Chromium, Hexavalent Chromium and COD in treated contaminated stormwater. As authorized by 40 CFR Part 419.43(f) and 40 CFR Part 419.44(e), the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff times the Effluent Limitation Factors listed below:

Daily Maximum Factors (lbs/1000 gallons)

BOD5 - 0.40
TSS - 0.28
Oil and Grease - 0.13
Phenolic Compounds - 0.0029
Total Chromium - 0.005
Hexavalent Chromium - 0.00052
COD - 3.0

Monthly Average Factors (lbs/1000 gallons)

BOD5 - 0.22
TSS - 0.18
Oil and Grease - 0.067
Phenolic Compounds - 0.0014
Total Chromium - 0.0018
Hexavalent Chromium - 0.00023
COD - 1.5

Thus, the stormwater allocation values (kg/day) shall be calculated using the following equations:

Monthly Average Stormwater Allocation (SW_{avg}) = (Total Monthly Stormwater Flow, 1000 gallons)/Number of days in the month x (Monthly Average Effluent Limitation Factor for Pollutant in lbs/1000 gallons)/2.2

Daily Maximum Stormwater Allocation (SW_{max}) = (Total Monthly Stormwater Flow, 1000 gallons)/Number of days in the month x (Daily Maximum Effluent Limitation Factor for Pollutant in lbs/1000 gallons)/2.2

where stormwater flow is determined by the procedure listed in condition G.2 b below.

- b. When utilizing the stormwater credit, rainfall data for the monthly monitoring period shall be obtained from the National Weather Service to estimate the average volume of rainfall runoff that will be treated in that month at the Wastewater Treatment Plant. Based on an area of approximately 900 acres, it is estimated that each inch of rainfall generates 3.78 million gallons of rainfall runoff. Therefore, the average stormwater flow amount for the month is calculated by dividing the total amount of rainfall in the month by the number of days in that month. This value shall also be reported on the DMR form as "Flow Total" under the "Precipitation" sample point and shall be the stormwater flow amount used in the equations outlined in G.2a above. Please note that the permittee must convert their stormwater flow to 1000 gallons/day in the equations above to calculate SWmax and SWavg.

However, if the stormwater credit is not utilized, the permittee need not monitor the stormwater flow. In that case, the permittee can report Code = N on the DMR form under the "Precipitation" sample point for all parameters that specify an allocation for stormwater.

3. Final Adjusted Load

- a. The final loading values that will be compared against the effluent limitation for compliance purposes is represented by the sample point Effluent Adjusted Value. This value is calculated by subtracting the stormwater loadings calculated in G.2 above from the net loading calculated in G.1 above.

Therefore,

Effluent Adjusted Value = Effluent Net - Effluent Rain (stormwater)

Daily Maximum Effluent Adjusted Value = Highest Mnet - SWmax

Monthly Average Effluent Adjusted Value = Sum of Mnet values in the reporting period/number of samples in the reporting period - SWavg.

4. Acceptance of Wastewater from Offsite Facilities

- a. This permit authorizes acceptance of wastewater from the following facilities: Buckeye Pipeline (formerly ExxonMobil Pipeline Co.), NuStar Energy L.P. (formerly Valero Logistics and Operations L.P.), ExxonMobil Research and Engineering Co., and ExxonMobil Lubricant and Petroleum Specialties Company. As the permittee, Paulsboro refinery Company is fully responsible for compliance with the effluent limitations and monitoring conditions set forth in the permit.

5. Section 316(b) Application Components

- a. Source water physical data (40 CFR 122.21(r)(2)).
- A narrative description and scaled drawings showing the physical configuration of all source water bodies used by the permittee, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports the permittee's determination of the water body type where each cooling water intake structure is located.
 - Identification and characterization of the source waterbody's hydrological and geomorphological features, as well as the methods the permittee used to conduct any physical studies to determine the intake's area of influence within the waterbody and the results of such studies.

iii. Locational maps.

b. Cooling water intake structure data (40 CFR 122.21(r)(3)).

- i. A narrative description of the configuration of each of the permittee's cooling water intake structures and where it is located in the water body and in the water column.
- ii. Latitude and longitude in degrees, minutes, and seconds for the permittee's cooling water intake structure.
- iii. A narrative description of the operation of the permittee's cooling water intake structure, including design intake flows, daily hours of operation, number of days of the year in operation and seasonal changes, if applicable.
- iv. A flow distribution and water balance diagram that includes all sources of water to the facility, recirculating flows, and discharges.
- v. Engineering drawings of the cooling water intake structure.

c. Source water baseline biological characterization data (40 CFR 122.21(r)(4)):

The permittee is required to collect information to characterize the biological community in the vicinity of the cooling water intake structure and to characterize the operation of the cooling water intake structures. This supporting information must include existing data (if they are available). However, the permittee may supplement the data using newly conducted field studies if the permittee chooses to do so. The information the permittee must submit includes.

- i. A list of the data in paragraphs (ii.) through (vi.) of this section that are not available and efforts made to identify sources of the data.
- ii. A list of species (or relevant taxa) for all life stages and their relative abundance in the vicinity of the cooling water intake structure.
- iii. Identification of the species and life stages that would be most susceptible to impingement and entrainment. Species evaluated should include the forage base as well as those most important in terms of significance to commercial and recreational fisheries.
- iv. Identification and evaluation of the primary period of reproduction, larval recruitment, and period of peak abundance for relevant taxa.
- v. Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the cooling water intake structure.
- vi. Identification of all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at the permittee's cooling water intake structures.
- vii. Documentation of any public participation or consultation with Federal or State agencies undertaken in development of the plan.

- viii. If the permittee supplements the information requested in paragraph (r)(4)(i) of this section with data collected using field studies, supporting documentation for the Source Water Baseline Biological Characterization must include a description of all methods and quality assurance procedures for sampling, and data analysis including a description of the study area; taxonomic identification of sampled and evaluated biological assemblages (including all life stages of fish and shellfish); and sampling and data analysis methods. The sampling and/or data analysis methods the permittee uses must be appropriate for a quantitative survey and based on consideration of methods used in other biological studies performed within the same source water body. The study area should include, at a minimum, the area of influence of the cooling water intake structure.
 - ix. Identification of protective measures and stabilization activities that have been implemented, and a description of how these measures and activities affected the baseline water condition in the vicinity of the intake.
 - x. A list of fragile species, as defined at 40 CFR 125.92(m), at the facility. The permittee need only identify those species not already identified as fragile at 40 CFR 125.92(m).
 - xi. If the permittee has obtained incidental take exemption or authorization for its cooling water intake structure(s) from the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, any information submitted in order to obtain that exemption or authorization may be used to satisfy the permit application information requirement of paragraph 40 CFR 125.95(f) if included in the application.
- d. Cooling Water System Data (40 CFR 122.21(r)(5)):
- The permittee must submit the following information for each cooling water intake structure used or intended to be used.
- i. A narrative description of the operation of the cooling water system and its relationship to cooling water intake structures; the proportion of the design intake flow that is used in the system; the number of days of the year the cooling water system is in operation and seasonal changes in the operation of the system, if applicable; the proportion of design intake flow for contact cooling, non-contact cooling, and process uses; a distribution of water reuse to include cooling water reused as process water, process water reused for cooling, and the use of gray water for cooling; a description of reductions in total water withdrawals including cooling water intake flow reductions already achieved through minimized process water withdrawals; a description of any cooling water that is used in a manufacturing process either before or after it is used for cooling, including other recycled process water flows; the proportion of the source waterbody withdrawn (on a monthly basis).
 - ii. Design and engineering calculations prepared by a qualified professional and supporting data to support the description required by paragraph (r)(5)(i) of this section.
 - iii. Description of existing impingement and entrainment technologies or operational measures and a summary of their performance, including but not limited to reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and usage.
- e. Chosen Method(s) of Compliance with Impingement Mortality Standard (40 CFR 122.21(r)(6)).

- i. The permittee must identify the chosen compliance method for the entire facility; alternatively, the permittee must identify the chosen compliance method for each cooling water intake structure at its facility. The permittee must identify any intake structure for which a BTA determination for Impingement Mortality under 40 CFR 125.94 (c)(11) or (12) is requested. In addition, if the permittee chooses to comply via 40 CFR 125.94 (c)(5) or (6), the permittee must also submit an impingement technology performance optimization study as described in 40 C.F.R. § 122.21(r)(6)(i) or (ii), as applicable.
- f. Entrainment Performance Studies (40 CFR 122.21(r)(7)).
 - i. The permittee must submit any previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies. Any such submittals must include a description of each study, together with underlying data, and a summary of any conclusions or results. Any studies conducted at other locations must include an explanation as to why the data from other locations are relevant and representative of conditions at the permittee's facility. In the case of studies more than 10 years old, the permittee must explain why the data are still relevant and representative of conditions at the facility and explain how the data should be interpreted using the definition of entrainment at 40 CFR 125.92(h).
- g. Operational Status (40 CFR 122.21(r)(8)):

The permittee must submit a description of the operational status of each generating, production, or process unit that uses cooling water, including but not limited to.

 - i. For power production or steam generation, descriptions of individual unit operating status including age of each unit, capacity utilization rate (or equivalent) for the previous 5 years, including any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors, including identification of any operating unit with a capacity utilization rate of less than 8 percent averaged over a 24-month block contiguous period, and any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes to fuel type.
 - ii. For process units at the permittee's facility that use cooling water other than for power production or steam generation, if the permittee intends to use reductions in flow or changes in operations to meet the requirements of 40 CFR 125.94(c), descriptions of individual production processes and product lines, operating status including age of each line, seasonal operation, including any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors, any major upgrades completed within the last 15 years, and plans or schedules for decommissioning or replacement of process units or production processes and product lines.
 - iii. For all manufacturing facilities, descriptions of current and future production schedules.
 - iv. Descriptions of plans or schedules for any new units planned within the next 5 years.
- h. Due Date.
 - i. Application components specified in Part IV.G.5.a through g shall be submitted with the renewal application which is due on or before EDP+4.5 years.

PAULSBORO REFINING CO , Paulsboro Boro

Permit No.NJ0005029
DSW120001 Surface Water Renewal Permit Action

APPENDIX A:

**CHRONIC TOXICITY TESTING SPECIFICATIONS
FOR USE IN THE NJPDES PERMIT PROGRAM**

Version 2.1

May 1997

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- D.** Sheepshead Minnow (*Cyprinodon variegatus*), Larval Survival and Growth Test, method 1005.0
- E.** Inland Silverside (*Menidia beryllina*), Larval Survival and Growth Test, method 1006.0
- F.** *Mysidopsis bahia*, Survival, Growth, and Fecundity Test, method 1007.0
- G.** *Champia parvula*, Sexual Reproduction Test, method 1009.0

VIII. REFERENCES

Notice: Mention of trade names or commercial products do not constitute endorsement or recommendation for use.

I. AUTHORITY AND PURPOSE

These methods specifications for the conduct of whole effluent chronic toxicity testing are established under the authority of the NJPDES permitting program, N.J.A.C. 7:14A-6.5(a)2 and 40 CFR 136, for discharges to waters of the State. The methods referenced herein are included by reference in 40 CFR 136, Table 1.A. and, therefore, constitute approved methods for chronic toxicity testing. The information contained herein serves to clarify testing requirements not sufficiently clarified in those methods documents and also serves to outline and implement the interlaboratory Standard Reference Toxicant Program until a formal laboratory certification program is established under N.J.A.C. 7:18. As such these methods are intended to be used to determine compliance with discharge permits issued under the authority of the NJPDES permit program. Tests are to be conducted in accordance with the general conditions and test organism specific method specifications contained in this document. All other conditions and specifications can be found in 40 CFR 136 and USEPA methodologies.

Until a subchapter on chronic toxicity testing within the regulations governing the certification of laboratories and environmental measurements (N.J.A.C. 7:18) becomes effective, tests shall be conducted in conformance with the methodologies as designated herein and contained in 40 CFR 136. The laboratory performing the testing shall be within the existing acute toxicity testing laboratory certification program established under N.J.A.C. 7:18, as required by N.J.A.C. 7:9B-1.5(c)5.

Testing shall be in conformance with the subchapter on chronic toxicity testing within the N.J.A.C. 7:18 when such regulations become effective. The laboratory performing the toxicity testing shall be within the chronic toxicity testing laboratory certification program to be established under that subchapter, when it becomes effective.

These methods are incorporated into discharge permits as enforceable permit conditions. Each discharge permit will specify in Part IV of the permit, the test species specific methods from this document that will be required under the terms of the discharge permit. Although the test species specific methods for each permit are determined on a case-by-case basis, the purpose of this methods document is to assure consistency among dischargers and to provide certified laboratories with information on the universe of tests to be utilized so that they can make the necessary preparations, including completing the required Standard Reference Toxicant testing. Please note that these methodologies are required for compliance testing only. Facilities and/or laboratories conducting testing under the requirements of a Toxicity Identification Evaluation or for informational purposes are not bound by these methods.

This document constitutes the second version of the NJDEP's interim chronic methodologies. This version contains no significant changes to the test methods themselves. However, in keeping with the Department's continued emphasis on good laboratory practices and quality control, the areas addressing the Standard Reference Toxicant Program, data analysis and data reporting, have been significantly revised.

II. GENERAL CONDITIONS

A. LABORATORY SAFETY, GLASSWARE, ETC.

All safety procedures, glassware cleaning procedures, etc., shall be in conformance with 40 CFR 136 and USEPA's "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms" and N.J.A.C. 7:18.

B. TEST CONCENTRATIONS / REPLICATES

All testing is to be performed with a minimum of five effluent concentrations plus a dilution water control. A second reference water control is optional when a dilution water other than culture water is used. The use of both a 0.5 or 0.75 dilution factor is acceptable for the selection of test concentrations. If hypothesis testing will be used to determine the test endpoint, one effluent concentration shall be the chronic permit limitation, unless the existing data for the discharge indicate that the NOEC is expected to be significantly less than the permit limit. The use of the 0.5 dilution factor may require more than five dilutions to cover the entire range of effluent concentrations as well as the chronic permit limit, since the permit limit will often not be one of the nominal concentrations in a 0.5 dilution series. In such an instance, the 0.5 dilution series may be altered by including an additional test concentration equal to the permit limit in the dilution series, or by changing the concentration closest to the permit toxicity limit to be equal to that limit. The Department recommends the use of the 0.75 dilution factor using Table 1.0 to determine test concentrations. That table establishes test concentrations based on the chronic toxicity limitation.

For either the 0.5 or 0.75 dilution factor, there shall be at least one test concentration above the permit limitation and at least three test concentrations below the permit limit along with the dilution water control unless the permit limitation prohibits such (e.g., limitations greater than 75% effluent). An effort shall be made to bracket the anticipated test result.

To use Table 1.0, locate the permit limit in column 4. The dilution series becomes the row that corresponds to the permit limit in column 4. For example, a permit limit of 41 would require a dilution series of the dilution water control, 17%, 23%, 31%, 41% and 55% effluent.

The number of replicates used in the test must, at a minimum, satisfy the specifications of the applicable methods contained herein. Increased data sensitivity can be obtained by increasing the number of replicates equally among test concentrations and thus an increased number of replicates is acceptable. Further, the use of nonparametric statistical analysis requires a minimum of four replicates per test concentration. If the data for any particular test is not conducive to parametric analyses and if less than four replicates were included, the test may not be considered acceptable for compliance purposes.

The use of single concentration tests consisting of the permit limitation as a concentration and a control is not permitted for compliance purposes, but may be used by a permittee in the conduct of a Toxicity Investigation Evaluation (TIE) or for information gathering purposes. Such a test would be considered a "pass" if there was no significant difference in test results, using hypothesis testing methods.

Table 1.0: 0.75 DILUTION SERIES INDEXED BY PERMIT LIMIT

				Permit Limit						Permit Limit	
Col #	1	2	3	4	5	Col #	1	2	3	4	5
	0.4	0.6	0.8	1	1.3		22	29	38	51	68
	0.8	1.1	1.5	2	2.7		22	29	39	52	69
	1.3	1.7	2.3	3	4		22	30	40	53	71
	1.7	2.3	3	4	5.3		23	30	41	54	72
	2.1	2.8	3.8	5	6.7		23	31	41	55	73
	2.5	3.4	4.5	6	8		24	32	42	56	75
	3	4	5	7	9		24	32	43	57	76
	3	5	6	8	11		24	33	44	58	77
	4	5	7	9	12		25	33	44	59	79
	4	6	8	10	13		25	34	45	60	80
	5	6	8	11	15		26	34	46	61	81
	5	7	9	12	16		26	35	47	62	83
	5	7	10	13	17		27	35	47	63	84
	6	8	11	14	19		27	36	48	64	85
	6	8	11	15	20		27	37	49	65	87
	7	9	12	16	21		28	37	50	66	88
	7	10	13	17	23		28	38	50	67	89
	8	10	14	18	24		29	38	51	68	91
	8	11	14	19	25		29	39	52	69	92
	8	11	15	20	27		30	39	53	70	93
	9	12	16	21	28		30	40	53	71	95
	9	12	17	22	29		30	41	54	72	96
	10	13	17	23	31		31	41	55	73	97
	10	14	18	24	32		31	42	56	74	99
	11	14	19	25	33		32	42	56	75	100
	11	15	20	26	35	24	32	43	57	76	
	11	15	20	27	36	24	32	43	58	77	
	12	16	21	28	37	25	33	44	59	78	
	12	16	22	29	39	25	33	44	59	79	
	13	17	23	30	40	25	34	45	60	80	
	13	17	23	31	41	26	34	46	61	81	
	14	18	24	32	43	26	35	46	62	82	
	14	19	25	33	44	26	35	47	62	83	
	14	19	26	34	45	27	35	47	63	84	
	15	20	26	35	47	27	36	48	64	85	
	15	20	27	36	48	27	36	48	65	86	
	16	21	28	37	49	28	37	49	65	87	
	16	21	29	38	51	28	37	50	66	88	
	16	22	29	39	52	28	38	50	67	89	
	17	23	30	40	53	28	38	51	68	90	
	17	23	31	41	55	29	38	51	68	91	
	18	24	32	42	56	29	39	52	69	92	
	18	24	32	43	57	29	39	52	70	93	
	19	25	33	44	59	30	40	53	71	94	
	19	25	34	45	60	30	40	53	71	95	
	19	26	35	46	61	30	41	54	72	96	
	20	26	35	47	63	31	41	55	73	97	
	20	27	36	48	64	31	41	55	74	98	
	21	28	37	49	65	31	42	56	74	99	
	21	28	38	50	67	32	42	56	75	100	

* Select the dilution series by finding the row which contains the permit limit in column #4.
NOTE: All values are in units of "% effluent" not toxic units.

C. DILUTION WATER

1. Marine and Estuarine Waters

A high quality natural water, such as the Manasquan River Inlet is strongly recommended as the dilution water source for chronic toxicity testing with marine and estuarine organisms. The use of the receiving water as the dilution water source is not required. Saline waters prepared with hypersaline brine and deionized water may also be used as dilution water. Hypersaline brines shall be prepared from a high quality natural seawater and shall not exceed a concentration of 100 ppt. The type of a dilution water for a permittee may not be changed without the prior approval of the Department.

The standard test salinity shall be 25 ppt, except for *Champia parvula*, which shall be tested at 30 ppt. Since most effluents are freshwater based, in most cases it will be necessary to adjust the salinity of the test concentrations to the standard test salinity.

2. Fresh Waters

A high quality natural water, such as Round Valley Reservoir (if access is allowed) or Lake Hopatcong, is strongly recommended as the dilution water source for chronic toxicity testing with freshwater organisms. It is not required to perform the toxicity testing with the receiving water as dilution water. Tests performed with a reconstituted water or up to 20% Diluted Mineral Water (DMW) as dilution water is acceptable. For testing with *Ceriodaphnia dubia*, the addition of 5 µg/l selenium (2 µg/l selenium with natural water) and 1 µg/l vitamin B12 is recommended (Keating and Dagbusan, 1984; Keating, 1985 and 1988). The source of a dilution water for a permittee may not be changed without the prior approval of the Department. Reconstituted water and DMW should be prepared with Millipore Super Q^R or equivalent, meet the requirements of N.J.A.C. 7:18-6 and should be aerated a minimum of 24 hrs prior to use, but not supersaturated.

D. EFFLUENT SAMPLE COLLECTION

Effluent samples shall be representative of the discharge being regulated. For each discharge serial number (DSN), the effluent sampling location shall be the same as that specified in the NJPDES permit for other sampling parameters unless an alternate sampling point is specified in the NJPDES discharge permit. For industrial dischargers with a combined process/sanitary waste stream, effluent sampling shall be after chlorination, unless otherwise designated in the permit.

For continuous discharges, effluent sampling shall consist of 24 hour composite samples consisting either of equal volumes taken once every hour or of a flow-proportionate composite sample, unless otherwise approved by the Department. At a minimum, three samples shall be collected as specified above, one every other day. The first sample shall be used for test initiation and the first renewal. The second sample for the next two renewals. The third sample shall be used for the final three renewals. For the *Champia* and *Selenastrum* tests, a single sample shall be collected not more than 24 hours prior to test initiation. No effluent sample shall be over 72 hours old at the time of its use to initiate or renew solutions in a test. It is acceptable to collect samples more frequently for chronic WET testing and if samples are collected daily for acute toxicity testing conducted concurrently, available samples may be used to renew the test solutions as appropriate.

For all other types of discharges, effluent sampling shall be conducted according to specifications contained within the discharge permit, methodology questionnaire or as otherwise specified by the Department. The use of grab samples or other special sampling procedures will be based on time of occurrence and duration of intermittent discharge events.

If a municipal discharger has concerns that the concentrations of ammonia and/or chlorine in an effluent are adequate to cause violations of the permit limit for chronic toxicity testing, the permittee should conduct analyses, as specified in USEPA's toxicity investigation methods documents, to illustrate the relationship between chronic effluent toxicity and chlorine and/or ammonia as applicable. This data may then be submitted

to the Department as justification for a request to use modified test procedures, which account for ammonia and/or chlorine toxicity, in future chronic toxicity tests. The Department may, where adequate justification exists, permit the adjustment of these pollutants in the effluent sample if discharge limits for these pollutants are contained in the NJPDES permit and those permit limitations are adequate for the protection of water quality. Any proposed modified test procedures to adjust effluent chlorine and/or ammonia shall be approved by the Department prior to use of those test procedures for any compliance testing.

Except for filtration through a 2 mm or larger screen or an adjustment to the standard test salinity, no other adjustments to the effluent sample shall be made without prior written approval by the Department. Aeration of samples prior to test start shall be minimized where possible and samples shall not be aerated where adequate saturation exists to maintain dissolved oxygen.

E. PHYSICAL CHEMICAL MEASUREMENTS

At a minimum, the physical chemical measurements shall be as follows:

- pH and dissolved oxygen shall be measured at the beginning and end of each 24 hour exposure period, in at least one chamber, of the high, medium and low test concentrations and the control. In order to ensure that measurements for these parameters are representative of the test concentrations during the test, measurements for these parameters should be taken in an additional replicate chamber for such concentrations which contains no test organisms, but is subject to the same test conditions.
- Temperature shall either be monitored continuously, measured daily in at least two locations in the environmental control system, or measured at the beginning of each 24 hr exposure period in at least one replicate for each treatment.
- Salinity shall be measured in all salt water tests at the beginning of each 24 hour exposure period, in at least one replicate for each treatment.
- For all freshwater tests, alkalinity, hardness and conductivity shall be measured in each new sample (100% effluent) and control.
- Nitrite, nitrate and ammonia shall be measured in the control before each renewal in the mysid test only.
- For samples of discharges where concentrations of ammonia and/or chlorine are known or are suspected to be sufficient to cause toxicity, it is recommended that the concentrations of these pollutants be determined and submitted with the standardized report form. The laboratory is advised to consult with the permittee to determine if these parameters should be measured in the effluent. Where such measurements are deemed appropriate, measurements shall be conducted at the beginning of each 24 hour exposure period. Also, since a rise in the test pH can affect the toxicity of ammonia in the effluent, analysis of ammonia during the test may be appropriate if a rise in pH is accompanied by a significant increase in mortality.

F. STATISTICS

The use of both hypothesis testing techniques and point estimate techniques are currently in use by the Department or by permittees for compliance purposes. The NJPDES permit should be checked to determine which type of analysis is required and appropriate for each specific facility. It is not acceptable to simply evaluate any data by "visual data review" unless in the analysis of survival data, no mortality occurred in the test. All data sets must be appropriately statistically evaluated.

For hypothesis testing techniques, statistical analysis shall follow the protocols in USEPA (1988, 1989) to evaluate adverse effects. A significance level of 0.05 shall be utilized to evaluate such effects. Use of a protocol not contained in these documents must be accompanied by a reference and explanation addressing its

applicability to the particular data set. Please note the following when evaluating data using hypothesis testing techniques.

Special attention should be given to the omission and inclusion of a given replicate in the analysis of mysid fecundity data (USEPA 1994, p. 275) and *Ceriodaphnia* reproduction data (USEPA 1994, page 174).

Determination of acceptability criteria and average individual dry weight for the growth endpoints must follow the specifications in the applicable documents (e.g., p.84 for saltwater methods document.)

Use of nonparametric statistical analyses requires a minimum of four replicates per test concentration. If the data for any particular test are not conducive to parametric analyses and if less than four replicates were included, the test may not be acceptable to the Department.

Where hypothesis testing is used for compliance purposes, if the results of hypothesis testing indicate that a deviation from the dose response occurs such that two test concentrations are deemed statistically significant from the control but an intermediate test concentration is not, the test is deemed unacceptable and cannot be used for compliance testing purposes.

For point estimate techniques, statistical analysis should follow the protocol contained in "A Linear Interpolation Method for Sublethal Toxicity: The Inhibition Concentration (IC_p) Approach (Version 2.0), July 1993, National Effluent Toxicity Assessment Center Technical Report 03-93." Copies of the program can be obtained by contacting the Department. The linear interpolation estimate IC_p values and not the bootstrap mean IC_p, shall be reported for permit compliance purposes. The IC_p value reported on the Discharge Monitoring Report shall be rounded off as specified in the Department's "Discharge Monitoring Report (DMR) Instruction Manual, December 1993." IC₂₅ values shall be reported under the parameter code listed as "NOEC" on the DMR, until the DMR's are adjusted accordingly.

If the result reported by the IC_p method is greater than the highest concentration tested, the test result is reported as "greater than C" where "C" is the highest tested concentration. If the IC_p is lower than the lowest concentration tested, the test result is reported as "less than C" where "C" is the lowest tested concentration.

If separate NOEC's/IC₂₅'s can be calculated from multiple test endpoints, for example a reproductive endpoint and a growth endpoint, the lowest NOEC/IC₂₅ value expressed in units of "% effluent" will be used to determine permit compliance and should, therefore, be reported as the NOEC/IC₂₅ value for the test. If the NOEC value for growth and/or reproduction is not lower than that for survival, the NOEC/IC₂₅ value reported for the test shall be as survival. For saltwater tests, where additional controls are used in a test (i.e. brine and/or artificial sea salt control), a T-test shall be used to determine if there is a significant difference between the original test control and the additional controls. If there is a significant difference between any of the controls, the test may be deemed unacceptable and if so, will not be used for permit compliance.

III. TEST ACCEPTABILITY CRITERIA

Any test that does not meet these acceptability criteria will not be used by the Department for any purpose and must be repeated as soon as practicable, with a freshly collected sample.

1. Tests must be performed by a laboratory approved for the conduct of chronic toxicity tests and certified for acute toxicity testing under N.J.A.C. 7:18.
2. Test results may be rejected due to inappropriate sampling, including the use of less than three effluent samples in a test and/or use of procedures not specified in a permit or methodology questionnaire, use of frozen or unrefrigerated samples or unapproved pretreatment of an effluent sample.
3. Controls shall meet the applicable performance criteria specified in the Table 2.0 and in the individual method specifications contained herein.
4. Acceptable and applicable Standard Reference Toxicant Data must be available for the test.
5. No unapproved deviations from the applicable test methodology may be present.
6. When using hypothesis testing techniques, a deviation from the dose response as explained in the statistical portion of this document shall not be present in the data.

Table 2.0:

CONTROL PERFORMANCE

TEST ORGANISM	MINIMUM SURVIVAL	MINIMUM WEIGHT GAIN	MINIMUM FECUNDITY/ REPRODUCTION
<i>Pimephales promelas</i>	80%	0.25 mg avg	N/A
<i>Ceriodaphnia dubia</i>	80%	N/A	Average of ≥ 15 young per surviving female
<i>Selenastrum capricornutum</i>	Density $\geq 2 \times 10^5$ cells/ml	N/A	Variability in controls not to exceed 20%.
<i>Cyprinodon variegatus</i>	80%	0.60 mg (unpreserved) avg 0.50 mg (preserved) avg	N/A
<i>Menidia beryllina</i>	80%	0.50 mg (unpreserved) avg 0.43 mg (preserved) avg	N/A
<i>Mysidopsis bahia</i>	80%	0.2 mg per mysid avg	egg production by 50% of control females if fecundity is used as an endpoint.
<i>Champia parvula</i>	100%	N/A	≥ 10 cystocarps per plant Plants in controls and lower test concentrations shall not fragment so that individual plants cannot be identified.

THE DETERMINATION OF A TEST AS UNACCEPTABLE DOES NOT RELIEVE THE FACILITY FROM MONITORING FOR THAT MONITORING PERIOD

IV. STANDARD REFERENCE TOXICANT TESTING

All chronic testing shall be accompanied by testing with a Standard Reference Toxicant (SRT) as a part of each laboratory's internal quality control program. Such a testing program should be consistent with the quality assurance/quality control protocols described in the USEPA chronic testing manuals. Laboratories may utilize the reference toxicant of their choice and toxicants such as cadmium chloride, potassium chloride, sodium dodecyl sulfate and copper sulfate are all acceptable. However, Potassium chloride has been chosen by several laboratories and is recommended by the Department. The concentration of the reference toxicant shall be verified by chemical analysis in the low and high test concentrations once each year or every 12 tests, whichever is less. It is not necessary to run SRT tests, for all species using the same SRT.

A. INITIAL STANDARD REFERENCE TOXICANT (SRT) TESTING REQUIREMENTS

At a minimum, this testing shall include an initial series of at least five SRT tests for each test species method. Acceptable SRT testing for chronic toxicity shall be performed utilizing the short term chronic toxicity test methods as specified herein. Reference toxicant tests utilizing acute toxicity testing methods, or any method other than those contained in this document are not acceptable. The laboratory should forward results of the initial SRT testing, including control charts, the name of the reference toxicant utilized, the supplier and appropriate chemical analysis of the toxicant to either address listed in the reporting requirements section herein. The initial series of a least five SRT tests for a specific test species method shall be completed and approved in writing by the Department prior to the conduct of any chronic toxicity testing for compliance purposes.

B. SUBSEQUENT SRT TESTING REQUIREMENTS

After receiving the initial approval from the Department to conduct chronic toxicity tests for compliance purposes, subsequent SRT testing shall be conducted as follows:

1. Where organisms used in testing are cultured at the testing laboratory, SRT testing should be conducted once per month for each species/method.
2. Where the laboratory purchases organisms from a laboratory certified in New Jersey for the conduct of acute toxicity testing and approved for the conduct of chronic toxicity testing for the test organism in question (i.e. the "supplier laboratory"), SRT data provided by the "supplier laboratory" for each lot of organisms purchased is acceptable as long as the SRT test result falls within the control limits of the control chart established by the "supplier laboratory" for that organism. The laboratory using purchased organisms is responsible for the results of any compliance tests they perform.
3. A testing laboratory purchasing organisms from a supplier laboratory must still perform SRT testing on a quarterly basis at a minimum, for each species they test with, in order to adequately document their own interlaboratory precision.
4. If a testing laboratory purchasing organisms elects not to use the SRT data from a "supplier laboratory" or such data is unavailable or where organisms are purchased from another organism supplier, the testing laboratory must conduct SRT testing on each lot of organisms purchased.
5. For industrial laboratories certified under N.J.A.C. 7:18 to conduct acute toxicity tests, only the SRT testing conditions specified in 2. through 4. above apply. Where that laboratory/facility cultures their own test organisms, the frequency of SRT testing required will be determined on a case by case basis, based on the frequency of testing for that facility.

NOTE: Based on these requirements, SRT data are considered applicable to a compliance test when the SRT test results are acceptable and the SRT test is conducted within 30 days of the compliance test, for the test species and SRT in question. Therefore, it is not necessary for an approved laboratory to run an SRT test every month if the laboratory is not conducting compliance tests for a particular species.

C. CHANGING OF AN ESTABLISHED REFERENCE TOXICANT

The SRT used for any species by a laboratory may be changed at any time provided that the following conditions have been satisfied:

1. A series of at least three reference toxicant tests are conducted with the new reference toxicant and the results of those tests are identified as satisfactory, in writing, by the Department.
2. Laboratories must continue using the already approved SRT in their ongoing QA/QC program, until such time as the letter referenced above, is received by the laboratory.

D. CONTROL CHARTS

Control charts shall be established from SRT test results in accordance with the procedures outlined in the USEPA methods documents. Control charts shall be constructed using IC25's using the following methods:

1. The upper and lower control limits shall be calculated by determining \pm two standard deviations above and below the mean.
2. SRT test results which exhibit an IC25 that is greater than the highest concentration tested or less than the lowest concentration tested (i.e. a definitive endpoint cannot be determined), shall not be used to establish control charts.
3. SRT tests which do not meet the acceptability criteria for a specific species shall not be used to establish control charts.
4. All values used in the control charts should be as nominal concentrations. However, the control charts shall be accompanied by a chart tabulating the test results as measured concentrations.
5. An outlier (i.e. values which fall outside the upper and lower control limits) should be included on the control chart unless it is determined that the outlier was caused by factors not directly related to the test organisms (e.g., test concentration preparation) as the source of variability would not be directly applicable to effluent tests. In such case, the result and explanation shall be reported to the Department within 30 days of the completion of the SRT test.

The control chart established for the initial series of SRT data submitted will be used by the laboratory and the Department to determine outliers from SRT test results reported in the "NJPDES Biomonitoring Report Form - Chronic Toxicity Test" submitted by the permittees for the test species. These initial control limits will remain unchanged until twenty SRT tests have been completed by the laboratory.

The following procedures shall be used for continually updating control charts after twenty acceptable SRT tests have been completed:

1. Once a laboratory has completed twenty acceptable SRT tests for a test species, the upper and lower control limits shall be recalculated with those twenty values.
2. For each successive SRT test conducted after these first twenty tests, a moving average shall be calculated and the control limits reevaluated using the last twenty consecutive test results.
3. The upper and lower control limits shall be reported on the "NJPDES Biomonitoring Report Form - Chronic Toxicity Tests" along with the SRT test result.

E. UNACCEPTABLE SRT TEST RESULTS

If a laboratory produces any SRT test results which are outside the established upper and lower control limits for a test species at a frequency greater than one test in any ten tests, a report shall be forwarded to the Department at the address contained herein. This report shall include any identified problem which caused the values to fall outside the expected range and the corresponding actions that have been taken by the laboratory. The Department may not accept or may require repeat testing for any toxicity testing that may have been affected by such an occurrence.

If a laboratory produces two consecutive SRT test results or three out of any ten test results which are outside the established upper and lower limits for a specific test species, the laboratory shall be unapproved to conduct chronic toxicity tests for compliance purposes for that test species. Reapproval shall be contingent upon the laboratory producing SRT test results within the established upper and lower control limits for that test species in two consecutive SRT tests. If one or both of those test results again fall outside the established control levels, the laboratory is unapproved for that test species until five consecutive test results within the established upper and lower control limits are submitted and approved by the Department.

F. ANNUAL SUBMITTALS

Control charts shall be forwarded to the Department on an annual basis, on the anniversary of approval for the test species.

The Department may request, at any time, any information which is essential in the evaluation of SRT results and/or compliance data.

V. TEST CANCELLATION / RESCHEDULING EVENTS

A lab may become aware of QA problems during or immediately following a test that will prevent data from being submitted or a lab may be unable to complete a tests due to sample collection or shipping problems. If for any reason a chronic toxicity test is initiated and then prematurely ended by the laboratory or at the request of the permittee, the laboratory shall submit the form entitled "Chronic Whole Effluent Toxicity Testing Test Cancellation / Rescheduling Event Form" contained herein. This form shall be used to detail the reason for prematurely ending the test. This completed form and any applicable raw data sheets shall be submitted to the appropriate biomonitoring program at the address above within 30 days of the cessation of the test.

Tests are considered to be initiated once test organisms have been added to all test chambers.

Submission of this form does not relieve the facility from monitoring for that monitoring period.

VI. REPORTING

The report form entitled "NJPDES Biomonitoring Report Form - Chronic Toxicity Tests" should be used to report the results of all NJPDES chronic compliance biomonitoring tests. Laboratory facsimiles are acceptable but must contain all information included on any recent revisions of the form by the Department. Statistical printouts and raw data sheets for all endpoints analyzed shall be included with the report submitted to the Department. Two copies of all chronic toxicity test report forms shall be submitted to the following address as applicable:

New Jersey Department of Environmental Protection
Mailcode 401-02B
Division of Water Quality
Bureau of Surface Water Permitting
P.O. Box 420 -401 East State Street
Trenton, New Jersey 08625-0420
Biomonitoring Program

It is not necessary to attach a copy of a test report form to the Discharge Monitoring Report (DMR) form when submitting this form to the Department. However, the results of all chronic toxicity tests conducted for compliance purposes must be reported on the DMR form under the appropriate parameter code in the monitoring period in which the test was conducted.

VII. METHOD SPECIFICATIONS

The following method specifications shall be followed as specified in the NJPDES permit. Any changes to these methods will not be considered acceptable unless they are approved in writing by the Department, prior to their use.

- A. Fathead Minnow (*Pimephales promelas*), Larval Survival and Growth Test, method 1000.0
- B. *Ceriodaphnia dubia*, Survival and Reproduction Test, method 1002.0
- C. Algal, (*Selenastrum capricornutum*), Growth Test, method 1003.0
- D. Sheepshead Minnow (*Cyprinodon variegatus*), Larval Survival and Growth Test, method 1005.0
- E. Inland Silverside (*Menidia beryllina*), Larval Survival and Growth Test, method 1006.0
- F. *Mysidopsis bahia*, Survival, Growth, and Fecundity Test, method 1007.0
- G. *Champia parvula*, Sexual Reproduction Test, method 1009.0

VIII. REFERENCES

1. Keating, K. 1985. The influence of Vitamin B12 deficiency on the reproduction of Daphnia pulex Leydig (Cladocera). J. Crustacean Biology 5:130-136.
2. Keating, K. 1988. N.J.D.E.P. Project C29589, Fiscal 1988 Third Quarter Summary Report. Producing Nutritionally Competent Daphnids for Use in Bioassay. 44p.
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4. NJDEP, 1993. Discharge Monitoring Report (DMR) Instruction Manual.
5. USEPA. 1994. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. EPA-600/4-91-003. July 1994. Second Edition.
6. USEPA. 1994. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. EPA/600/4-91/002. July 1994. Third Edition.

New Jersey Department Of Environmental Protection
Mailcode 401-02B
Division of Water Quality
Bureau of Surface Water Permitting
P.O. Box 420 -401 East State Street
Trenton, New Jersey 08625-0420
Biomonitoring Program

**CHRONIC WHOLE EFFLUENT TOXICITY TESTING
TEST CANCELLATION / RESCHEDULING EVENT FORM**

**THIS FORM IS TO BE COMPLETED AND SUBMITTED TO THE DEPARTMENT DIRECTLY BY THE
LABORATORY CONDUCTING CHRONIC TOXICITY TESTS WHENEVER A CHRONIC TOXICITY TEST IS
PREMATURELY ENDED FOR ANY REASON**

NJPDES No.: _____

FACILITY NAME: _____

LOCATION: _____

CONTACT: _____ PHONE: _____

CANCELLATION EVENT:

LABORATORY NAME / NUMBER: _____

CONTACT: _____

TEST START DATE: ____/____/____ TEST END DATE: ____/____/____

REASON FOR CANCELLATION: _____

EFFLUENT SAMPLING:

SAMPLING POINT / DESCRIPTION OF SAMPLING SITE: _____

SAMPLING INITIATED: DATE: ____/____/____ TIME: _____

SAMPLING ENDED: DATE: ____/____/____ TIME: _____

NUMBER OF EFFLUENT SAMPLES COLLECTED: _____

SAMPLE TYPE (GRAB/COMPOSITE): _____

RECEIVED IN LAB BY/FROM: _____

METHOD OF SHIPMENT: _____

(ALL APPLICABLE RAW DATA SHEETS MUST BE ATTACHED)

c: Permittees authorized agent.

Masterfile #: 14376

PI #: 46618

RWBR Approval Status List

The permittee is only authorized to utilize RWBR for the specific category, type and location that has been approved in the table below.

RWBR Category	Specific RWBR Type	Location	Status
PA	Spray Irrigation (Golf Course)	None	Not Approved
PA	Spray Irrigation (Athletic Fields, Playgrounds)	None	Not Approved
PA	Spray Irrigation (Residential Lawns)	None	Not Approved
PA	Vehicle Washing	None	Not Approved
PA	Hydroseeding/Fertilizing	None	Not Approved
PA	Decorative Fountains	None	Not Approved
PA	Toilet Flushing	None	Not Approved
RA-LA	Sod Irrigation	None	Not Approved
RA-LA	Spray Irrigation within a fenced perimeter or otherwise restricted area	None	Not Approved
RA-LA	Spray Irrigation within a fenced perimeter or otherwise restricted area (Without NH3 + NO3)	None	Not Approved
RA-LA	Spray Irrigation (not fenced or restricted area)	None	Not Approved
RA-CM	Street Sweeping	None	Not Approved
RA-CM	Dust Control	None	Not Approved
RA-CM	Fire Protection	Paulsboro Refinery	Approved
RA-CM	Vehicle Washing (at STP or DPW)	None	Not Approved
RA-CM	Composting	None	Not Approved
RA-IS	Sanitary Sewer Jetting	Paulsboro Refinery	Approved
RA-IS	Non-Contact Cooling Water	Paulsboro Refinery	Approved
RA-IS	Boiler Makeup Water	None	Not Approved
RA-IS	Road Milling	None	Not Approved
RA-IS	Hydrostatic Testing	Paulsboro Refinery	Approved
RA-IS	Parts Washing	Paulsboro Refinery	Approved
RA-IS	STP Washdown	Paulsboro Refinery WWTP	Approved

Categories:

PA Public Access
RA-LA Restricted Access-Land Application and Non-Edible Crops
RA-CM Restricted Access--Construction and Maintenance Operations
RA-IS Restricted Access--Industrial Systems

Abbreviations:

NH3 - Ammonia
NO3 - Nitrate
STP - Sewage Treatment Plant
DPW - Dept. of Public Works

Annual Reuse Report

Any facility that has received an RWBR authorization is required to submit an Annual Reuse Report. The following information, at a minimum, shall be included in the report, due on February 1st of each year.

- (1) The total wastewater reused (R) by the facility in the previous calendar year. If no wastewater was reused in the previous calendar year, report R as zero and skip to (6) below;
R = _____ gallons
- (2) The total wastewater discharged (D) by the facility in the previous calendar year;
D = _____ gallons
- (3) The percent of wastewater reused (%R) by the facility in the previous calendar year, calculated as follows:
 $\%R = R/(R+D)$, expressed as a percent;
%R = _____ percent
- (4) The total wastewater that was reused for **each reuse type** in the previous calendar year. This information should be provided in the chart format utilized in the RWBR Usage Table below;

RWBR Usage Table

RWBR Category	Specific RWBR Type	Location	Flow (gallons)

Attach additional pages as necessary.

- (5) An update to the correlation between Total Suspended Solids and Turbidity, if necessary;
Correlation = _____
- (6) Submit a completed copy of this form to:

For paper copies:
Mail Code 401 – 02B
Division of Water Quality
Bureau of Surface Water Permitting
P.O. Box 420
Trenton, NJ 08625-0420

For electronic copies:
ben.manhas@dep.state.nj.us

Annual Reuse Report - SAMPLE

Any facility that has received an RWBR authorization is required to submit an Annual Reuse Report. The following information, at a minimum, shall be included in the report, due on February 1st of each year.

- (1) The total wastewater reused (R) by the facility in the previous calendar year. If no wastewater was reused in the previous calendar year, report R as zero and skip to (6) below;
R = _____ gallons
- (2) The total wastewater discharged (D) by the facility in the previous calendar year;
D = _____ gallons
- (3) The percent of wastewater reused (%R) by the facility in the previous calendar year, calculated as follows:
 $\%R = R/(R+D)$, expressed as a percent;
%R = _____ percent
- (4) The total wastewater that was reused for **each reuse type** in the previous calendar year. This information should be provided in the chart format utilized in the RWBR Usage Table below;

RWBR Usage Table			
RWBR Category	Specific RWBR Type	Location	Flow (gallons)
	<i>For Example:</i>		
RA-CM	Street Sweeping	Local Township	42,000
RA-IS	Sanitary Sewer Jetting	Facility Sewer Service Area	15,000
RA-IS	STP Washdown	Sewage Treatment Plant	43,000
		Grand Total (R)	100,000

Attach additional pages as necessary.

- (5) An update to the correlation between Total Suspended Solids and Turbidity, if necessary;
Correlation = _____
- (6) Submit a completed copy of this form to:

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